THIS WEEK'S National Petroleum NEWS

Coming Meetings

Iowa Petroleum Association, Hotel Ft. Des Moines, Des Moines, Feb. 6, 7.

Kentucky Petroleum Marketers Association, Brown Hotel, Louisville, Feb. 8, 9.

Ohio Petroleum Marketers Association, Deshler-Wallick Hotel, Columbus, O., Feb. 13, 14, 15.

American Petroleum Institute, Division of Production, Mid-Continent district, Biltmore Hotel, Oklahoma City, Okla., Feb. 15, 16.

Illinois Petroleum Marketers, Pere Marquette Hotel, Peoria, Ill., Feb. 21, 22.

Indiana Petroleum Association, Hotel Severin, Indianapolis, Feb. 27, 28.

American Oil Burner Association, Philadelphia, March 5 to 9.

American Society for Testing Materials, Committee D-2, Washington, D. C., March 5 to 9.

Independent Oil Men's Association of New England, 10th annual meeting, Statler Hotel, Boston, March 15.

American Association of Petroleum Geologists. Baker Hotel, Dallas Tex., March 22, 23, 24.

American Chemical Society, Miami, Fla., Mar. 26 to 29.

Michigan Independent Petroleum Distributors Association, April 10, place to be named later.

National Oil Marketers Association, some time in April.

Oil Equipment & Engineering Exposition, Houston, Tex., April 16 to 21.

National Petroleum Association, Cleveland, O., April 19, 20.

American Chemical Society, Kansas City, regional meeting, May 3, 4, 5.

Natural Gasoline Association of America, annual meeting, Tulsa Hotel, Tulsa, Okla., May 9, 10, 11.

International Petroleum Exposition, Tulsa, May 12 to 19.

American Institute of Chemical Engineers, (tentative) Waldorf-Astoria, New York City, May 14 or 21.

Virginia Oil Jobbers Association and Virginia Oil Men's Association, Roanoke, Va., May, 17, 18.

American Petroleum Institute, Wm. Penn Hotel, Pittsburgh, Pa., May 22, 23, 24.

Northwest Petroleum Association, North Dakota division, June 14, 15; place to be decided later.

West Virginia Oil Marketers Association, Charleston, W. Va., June 28, 29.

Pennsylvania Grade Crude Oil Association, State College, Pa., June 28, 29.

American Chemical Society, Cleveland, Sept. 10 to 14.

National Petroleum Association, Atlantic City, N. J., Sept. 19, 20, 21.

Michigan Independent Petroleum Distributors Association, Oct. 9, place to be named later.

Big Four State Jobbers Association, Kansas City, Oct. 16, 17, 18.

American Petroleum Institute, Dallas, Tex., Nov. 12 to 15.

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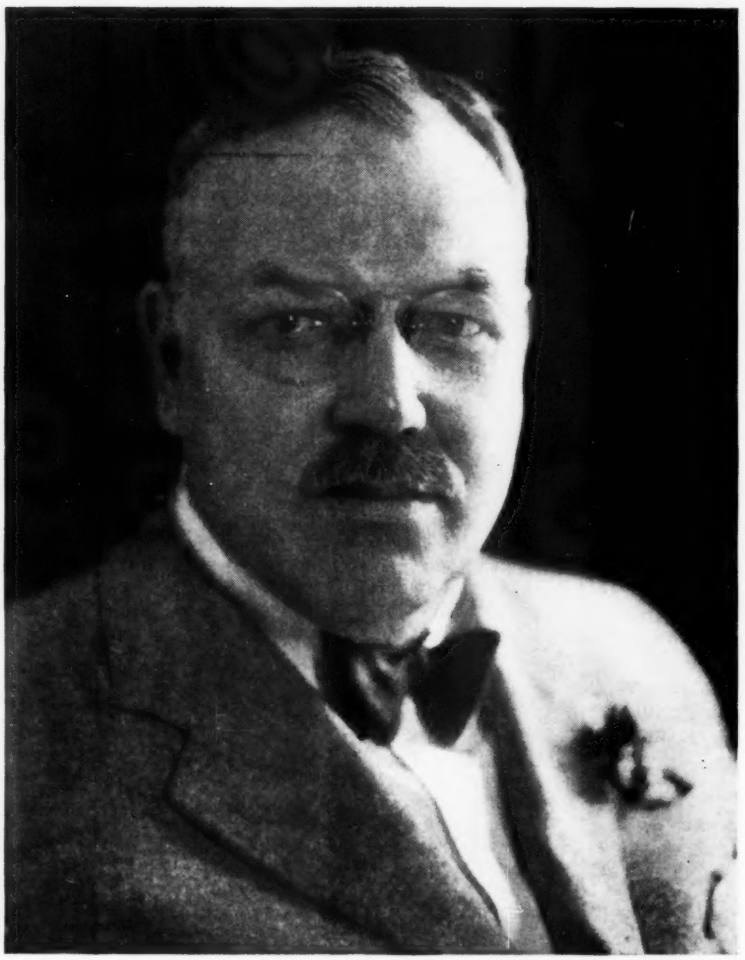

Photo by Blank-Stoller, Inc.

COLONEL FRANK R. COATES, chairman of the regional refining committee under the oil code in Region 1, comprising northeastern states is head of the oil and natural gas division of Henry L. Doherty & Co. In this division are included the many producing, refining, marketing, marine and pipeline subsidiaries of which Cities Service, Empire Oil & Refining and Crew Levick are the most widely known.

Col. Coates entered oil from the railroad and utility business. His first business experience was with the Baltimore & Ohio railroad and later he was chief engineer of the Chicago Great Western. When the Doherty interests acquired the Toledo Railways and Light Co. in 1913 Col. Coates was president of that company. In 1922 he was elected a Cities Service director and began to spend more and more of his time at the New York headquarters of the Doherty company.

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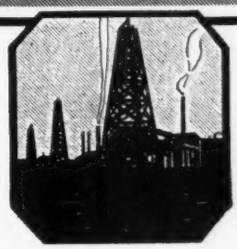

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Contract Forms and Agreements Being Redrafted by P. & C. Committee

Staff Special

WASHINGTON, Jan. 27

THE pooling agreement and the marketing agreement, with its seven standard forms of contract, for the oil industry are now being redrafted in line with modifications suggested by Oil Administrator Ickes.

When the redrafting is completed and approved by Administrator Ickes the signatories will be called back to sign the documents.

While it was quite generally accepted that signing of the original agreements bound the signatories to any modifications by the Administrator, it was felt that confusion and possible disagreement in the future could be avoided by having the companies again sign.

The number of signers to the pooling agreement is expected to be about 29 while the number signing the marketing agreement may be more than 65.

An effort will be made to have the smaller refineries sign up for the marketing agreement. Comparatively few signed the original agreement.

Effective date of the standard forms of contract will NOT be Feb. 1, as was tentatively decided upon. The date to be fixed will provide ample time for distribution of the amended forms, it is understood.

Meanwhile, both the Petroleum Administrative Board and the Planning and Co-ordination Committee have warned the industry against writing any contracts on the first drafts of the standard forms. These first drafts were released solely for study.

One point of difference between signers of the marketing agreement and the P. A. B. at the meetings this past week was over the clause, in all contracts, giving the President or his agent the power to cancel "or modify" the contract in order to effectuate the policy of the NIRA.

Some of the signers took the position that while the NIRA gave the President the power to cancel the contracts it did not extend to modifying the terms of an executed contract.

Solicitor Margold of the Interior Department, chairman of the P. A. B., took an opposite view.

He held that the President, acting through Administrator Ickes, retained the power to amend the agreements or contracts by virtue of Sec. 10 (b) of the NIRA.

Happily, an impasse was avoided by the two parties reaching an agreement which does not involve a yielding by either side.

Each form of contract, said Solicitor Margold on Jan. 26, will incorporate Sec. 10 (b) of the NIRA in the clause where the words "or modify" appeared in the first drafts.

Sec. 10 (b) reads: "The President may from time to time cancel or modify any order, approval, license, rule, or regulation issued under this title; and each agreement, code of fair competition, or license approved, prescribed, or issued under this title shall contain an

Contract Forms

TEXT of the standard contract forms under the marketing agreement are published in this issue beginning on Page 29. These forms are to be slightly revised and hence are not to be used except for study. The commercial consumer contract is not included since none is to be approved.

Subscribers who have ordered quantities of reprints for employes and customers containing full text of the marketing and pooling agreements; Ickes' statement and orders; and the contract forms; in line with the announcement on Page 9 of the Jan. 24 issue, will be furnished these as quickly as text of the revised forms and the revised agreements are released.

express provision to that effect."

Should there ever come a time when Administrator Ickes orders a modification of an executed contract which the parties are unwilling to accept, they can test in court his power to do so.

Between 60 and 70 representatives of companies signing the agreements met at the Carlton Hotel Jan. 24 on call of Judge Amos L. Beaty, acting chairman of the P. and C. Committee.

After distribution of the standard forms of contract, the meeting recessed until 10 o'clock Thursday when it met at the Washington Hotel. Thursday and Friday's sessions were devoted to discussion of the agreements and contracts.

It was decided to have the Marketing Subcommittee of the P. and C. Committee redraft the marketing agreement and standard forms of contract in line with suggestions of Administrator Ickes. A committee composed of judge Beaty, Axtell J. Byles, and C. B. Ames, was named to redraft the pooling agreement. This committee will also confer with the Administrator and the P. A. B.

The meeting adjourned at 6 o'clock Friday evening to reconvene next week on call of Chairman Beaty.

Companies, with their representatives, attending the meetings, included: Atlantic Refining Co., by John H. Stone, Harold B. Stone, and W. M. Irish; Associated Oil Co., by Robert Mikeley; Aetna Oil Service, Inc., by W. R. Abbott; Cities Service Co., by W. A. Einsheimer, F. R. Coates, Chas. E. Gately, and Harry D. Frueauff; Continental Oil Co., by James J. Cosgrave; Globe Oil & Refining Co., by A. E. Landsittel; Gulf Refining Co., by W. V. Hartmann, O. H. Carlisle, and J. F. Drake; Johnson Oil Refining Co., by G. C. Lilly and I. H. Johnson.

Magnolia Petroleum Co., by Fred M. Lege, Jr.; Mid-Continent Petroleum Corp., by R. W. McDowell; Moutray Oil Co., by T. E. McGlathery; Ohio Oil Co., by C. H. Gompf and O. D. Donnell; Olney Oil & Refining Co., by D. G. Gray; Panhandle Refining Co., by D. G. Gray; Phillips Petroleum Co., by H. A. Trower; Plymouth Oil Co., by W. S. Wallanan; Pure Oil Co., by H. M. Dawes, Geo. C. Morris, L. S. Wescoat, and C. B. Watson.

Rock Island Refining Co., by L. E. Kincannon; Standard Oil Co. of Neb., by A. H. Richardson; Standard Oil Co. of Calif., by J. L. Quinn; Standard Oil Co. of Ind., by Allan Jackson, E. J. Bullock, L. L. Stephens, and C. H. Thompson; Standard Oil Co. of N. J., by R. G. Stewart, W. S. Farish, and E. S. Hall; Standard Oil Co. of Ohio, by W. W. Maxwell, Standard Oil Co. of Ky., by W. G. Violette.

Sinclair Refining Co., by J. W. Carnes, Roy T. Osborn and H. R. Gallagher; Socony Vacuum Corp., by C. E. Arnott, H. J. Muller, H. T. Ashton, H. A. Coffin, Bryan S. Reid, and C. L. Jones; Skelly Oil Co., by W. G. Skelly; Sun Oil Co., J. N. Pew, Jr., and J. Howard Pew; Shell Union Oil Co., R. Van Doude; South Penn Oil Co., P. S. Curry, Jno. S. Harp, and John L. Hays.

Taxman Refining Co., by J. J. Taxman; Tidewater Oil Co., by J. D. Collins and E. L. Shea; The Texas Co., by H. W. Dodge, W. S. S. Rodgers, C. B. Ames, and Geo. H. Ray; Texas Oil Products Co., by C. R. Starnes; Texas Pacific Coal & Oil Co., by O. E. Mitchell; Union Oil Co. of Calif., by Fayette B. Dow; Vickers Petroleum Co., by J. A. Vickers; Waggoner Refining Co., by D. G. Gray; and Wilcox Oil & Gas Co. by G. A. Dye.

The Petroleum Administrative Board was represented by J. W. Steele and R. Gordon Lowe.

Following statement was issued by the P. and C. Committee Jan. 27: "The meeting of the signatories to the National Petroleum Agency and Marketing Agreements that was convened in Washington, January 24th, recessed at 6 p.m., Jan. 26, subject to call next week.

"This was made necessary in order to give time to consider matters largely of form and detail.

"A committee consisting of Amos L. Beaty, Axtell J. Byles, and C. B. Ames, was appointed to confer with the Petroleum Administrative Board and the Petroleum Administrator.

"The meeting will reconvene upon the call of the chairman, Amos L. Beaty, in Washington, D. C.

"Because of changes to be made in some of the uniform contracts, which have had some circulation, the industry is cautioned not to use these contracts which will be rewritten for distribution at a later date."

The following statement was issued Jan. 27 to newspapermen at the Interior Department:

"Secretary of the Interior Harold L. Ickes, the Oil Administrator, today announced that no regulations would be issued at this time to cover the use of proposed standard forms of contract to govern the distribution of petroleum and its products under the Marketing Agreement approved by him Jan. 19.

"Administrator Ickes also said that proposed forms of contracts printed and distributed by the Planning and Co-ordination Committee, representing the oil industry under the code of fair competition for the petroleum industry, were incorrect and would have to be revised.

"The forms printed by the Planning and Co-ordination Committee are incorrect, Administrator Ickes explained, because the commercial discount plan proposed in the official commercial consumer contract has not yet been submitted to the administrator for approval, and because some of the provisions of all the contracts require redrafting in order to carry out the purposes of the National Industrial Recovery Act.

"Administrator Ickes said that the Planning and Co-ordination Committee had advised him that it was recalling and destroying copies of the contract forms that had been distributed."

Photographer Representative

THE only company which has been authorized by this publication to solicit photographs of oil men for publication in NATIONAL PETROLEUM NEWS is Blank & Stoller, Inc., 227 East 45th St., New York.

Information has been received that representatives of another photographer have been soliciting photographs in Houston, and stating that they were representing NATIONAL PETROLEUM NEWS. Such representations are incorrect.

THE EDITORS' VIEWPOINT

Agreements Give Industry Profit Opportunity

By Warren C. Platt, Editor

THE oil industry is at the turn in the road. We can go from here on and make a profit or we can wallow around in the sea of despond where we have been for some years and make no profit.

Oil Administrator Ickes has approved the two major agreements which will control the oil industry for a number of years and perhaps even longer. Those agreements are the pool created by 26 of the larger companies to buy and sell gasoline so that the tank car market will always be a reasonable one, and the agreement signed at the present moment by refiners with more than 85 per cent of the crude oil charges to stills in November of last year.

These two agreements may not be all that many of us may want but they are the best step that has been made by the oil industry toward making a profit. Now that they have been decided upon by a large number of oil men and approved by Oil Administrator Ickes the thing to do is to go along with them and get all the good that all of us can from them. The pooling agreement should work without regard to the marketing agreement. Every one should give it every opportunity to work.

The marketing agreement is more complex but it still deserves the entire support of every oil man who is interested in curing the industry's troubles.

The industry should be turning the corner right now for profits and it will turn the corner to the extent that every man supports and carries through the injunctions in these two agreements.

Commercial Consumer Contract Said To be "Unacceptable" by P. A. B.

WASHINGTON, Jan. 29

THERE will be no standard form of contract for commercial consumers under the Marketing Agreement it was stated today at the Petroleum Administrative Board.

Instead, a provision covering commercial discounts will be inserted in the oil code as a modification or interpretation of Rule 3 Art. V. This provision, however, will not be the discount plan incorporated in the "Official Commercial Consumer Contract", No. M-5 as drawn up by the Planning and Co-ordination Committee because this plan was "unacceptable", it was stated at the P.A.B.

The commercial consumer discount allowed under the contract which is now described as "unacceptable" allowed a discount of 2 cents a gallon on gasoline of over 60 octane providing deliveries exceeded 3000 gallons per month. A discount of 1 cent per gallon was to be allowed on less than 60 octane gasoline providing deliveries exceeded 3000 gallons per month. No discounts were to be allowed at time of delivery.

One provision of the contract was that on deliveries of less than 25 gallons the price would be 2 cents per gallon over tank wagon. Where tank wagon and service station prices are identical this would amount to a delivery charge of 2 cents per gallon on small dumps. If the buyer earned the discount in the month in which delivery was made the actual price would revert to the posted price on above 60 octane gasoline or to 1 cent over the posted price for below 60 octane. The operation of this feature of the contract would have an effect also on gross margins, raising the margin to more than 6 cents on small deliveries in case discounts should not be earned.

There was considerable discussion of the commercial consumer contract at the Washington meetings last week and Oil Administrator Ickes, in an official statement Jan. 27, stated that the commercial discount plan proposed in the contract had not been submitted to him for approval.

In general the standard contract forms, as tentatively issued, cover three grades of commercial gasoline; above 70 octane number; 60 to 70 octane number and below 60 octane number. No differentials in price between these grades are stated.

The term of the contracts is uniformly one year, with 30-day cancellation clauses. They cover only gasoline and other motor fuels, taking up no other petroleum products. They call upon both seller and purchaser to conform to the latter and spirit of the oil code.

In general, the contracts throw upon the purchaser the

responsibility to uphold authorized prices of the seller; and in turn to see to it that parties to whom he, in turn, resells also maintain duly authorized prices. Discounts and differentials provided for in the forms of contracts conform to the marketers' and retailers' margins as described in the agreements.

Each contract form carries a box at the top of its first page, with a heading, "Important Notice." This states the order of the Oil Administrator to the effect that a violation of the marketing agreement, or of a contract entered into under its terms, is a violation of Title 1, of the NIRA, and punishable by fine and imprisonment.

The first tentative form of contract, as the series is officially numbered, is the Distributor's Marginal Contract.

Its first clause stipulates; "Seller hereby agrees to sell and deliver and Purchaser agrees to buy, receive and pay for the entire quantity (subject to maxima and minima below stated) of motor fuel, in full tank car, truck train or barge lots, required by Purchaser in Purchaser's business of distributing petroleum products."

This form of contract covers three grades of gasoline, as mentioned above, and the reference to price is given as; "Seller's authorized service station price per gallon in effect at destination at time of shipment, less Seller's posted discount to distributors." A paragraph on discounts reads; "In no event shall said discounts (a) on motor fuels of 60 Octane and above be less than 6 cents per gallon or one and one half times Seller's authorized discount on said motor fuels to undivided dealers buying from Purchaser, whichever is the greater, and (b) on motor fuels of below 60 Octane, be more than 4.5 cents per gallon or one and one half times Seller's authorized discount on said motor fuels to undivided dealers buying from Purchaser, whichever is less."

This is the method of stating the minimum gross marketing margin and the maximum margin on third-grade, as set up in the marketing agreement itself.

A rider to this contract form provides that the purchaser may elect to buy third grade gasoline, "motor fuel of less than 60 Octane," it is stated in the contract, at the seller's posted spot tank car price, in place of a price based on the retail price less discounts.

The second form is the Dealer Contract. The stipulation with regard to price is; "Seller's service station price (without deduction or discount) for the grade delivered in effect at time and for place of delivery as posted at Seller's bulk plant from which deliveries are made, less only Seller's prevailing discount in effect to dealers of purchaser's class at the time and for place of delivery as posted at said bulk plant."

This form applies to divided and undivided accounts. A divided dealer is defined, in the form, as "One selling motor fuel of more than one supplier from the same or adjoining locations." An undivided dealer is defined as "One selling motor fuel of only the Seller from the same or adjoining locations."

The form stipulates a divided dealer, as a purchaser, may become an undivided dealer at any time he elects; while an undivided dealer may become a divided dealer upon 30 days' notice to the supplying company.

The third form of contract applies to tank ship sales on a spot price basis.

The fourth is a Confirmation of Acceptance and Order on Spot Tank Car Sales. It is based on the posted spot tank car price in effect at time of shipment. It gives the seller the right to determine discounts and allowances given by the purchaser to his resellers. It reads: "The intent of this provision is that you shall strictly maintain and cause resellers buying from you to maintain the prices of our motor fuel designated from time to time by us for the territory in which you do business."

The fifth form of contract was the commercial consumer contract which has been discussed previously.

The sixth form of contract is a confirmation of acceptance and order for spot barge and tank ship sales.

The seventh is a Commission Agency Agreement for bulk station agents. Commissions are to be designated subject to the condition that, "when expressed in cents per gallon on average monthly sales and added to the undivided dealer margin, applicable in the particular territory, the commissions shall not exceed the prevailing gross marketing margin determined for guaranteed marginal distributors, jobbers or wholesalers pursuant to the provisions of the marketing agreement."

Postpone Hearing of Code Labor Violation Case

HOUSTON, Jan. 26.—Hearing has been postponed until Feb. 21 on charges that the Phoenix Refining Co., operating two Houston skimming plants, had violated the fair practices provisions of the petroleum code in connection with employment of a night watchman whose duties are construed to be those of a pumper.

Charges against the Phoenix officials were based on the federal contention that the company worked J. R. Yates 12 hours a day, seven days a week, from Sept. 2 to Dec. 13, 1933, each of the 103 days constituting separate violations of the code. LaVergne Guinn, assistant United States attorney for code prosecutions, filed the charges.

Phoenix operates skimming plants at Pettus, Luling, San Antonio and Dallas, in addition to the two Houston refineries, and is the eighth largest gasoline distributor, in terms of gallonage, in the state of Texas at present.

Ask Injunction Against Giving Premiums

CHICAGO, Jan. 26.—A petition for an injunction to restrain the Suburban Motor Service Co., Chicago from giving away premiums in violation of the petroleum code, was asked by U. S. District Attorney Green before Federal Judge Barnes yesterday. The judge took the case under advisement and ordered both sides to file briefs.

This is the first attempt in Chicago to bring court action against alleged code violators. The Suburban company operate service stations in the city.

Inefficient Stations Must Close Majewski Tells Jobbers

By E. L. Barringer
N. P. N. Staff Writer

MILWAUKEE, Jan. 25

UNECONOMIC, high operating cost, stations will have to close, as the code cannot protect the inefficient outlet, whether it be large or small, B. L. Majewski, Deep Rock Oil Corp. and member of the Planning and Co-ordination Committee, told jobbers attending the Wisconsin Petroleum Association convention here Jan. 23 to 25.

Closing stations will throw men out of work, he added, but they will be absorbed by the industry through still shorter hours. These statements were made in the discussion of the new marketing agreement, in response to a question on the status of high cost outlets under the new margins.

Discussion of the marketing agreement and a spirited clash with supporters of farmer co-operative oil companies were the highlights of Mr. Majewski's address.

The theme of the convention, that attracted more than 600 jobbers, was the code. Provisions of the marketing section of the code were discussed on the first day, with M. G. Peeters, vice-chairman of the Wisconsin state committee, leading the session. On the second day Mr. Majewski discussed the code and agreements. On the third day jobbers held a round table discussion on information on the proposed standard forms of contracts published in *Platt's Oilgram.*

On the farmer co-operative situation Mr. Majewski issued the challenge that a supporter of the co-ops. and he would visit the President, present their respective sides of the situation, and abide by the President's decision. In turn supporters of the co-ops. invited the industry to join them and go co-operative.

Co-ops. were charged by Mr. Majewski in a vehement speech with being poachers, by going into the marketing end of the business and that if they were truly co-operative they would also enter the producing and refining branches.

Co-ops. also were charged with using solicitors, paid for out of the taxpayer's pocket, to organize co-operatives.

Mr. Majewski had said that the code recognizes all forms of marketing companies, but that no one type of marketer would be allowed to have an undue advantage over any other type. During the co-operative discussion he further elaborated on how protection for the co-operative was written in after the code hearings, and charged that the co-operatives did not come forward and help write the provisions.

He further charged that the President's proclamation was not directed at the oil co-op., but at co-ops. in other industries. At this point a clash hinged on whether an attempt was being made to picture the President as ignorant. Mr. Majewski answered co-op. supporters by pointing out that the issue was undoubtedly misunderstood as to the affect of the co-op. on the small business man and that a great man in the White House and that President Roosevelt was eminently fair.

Mr. Majewski closed by urging co-operatives to co-operate in arriving at a fair solution of the problem.

In the question and answer session on the agreements Mr. Majewski made the following points:

The marketing agreement deals only with gasoline, and gasoline cannot be used as a club to induce the jobber to take on the refiner's full line. Later, he told a jobber that other major oil products would come under consideration, but that the present agreements concerned only gasoline, the first step.

The buying pool shortly will place the price of below 60 octane gasoline at around 5 cents, which will give the refiner an opportunity to just about break even, he said.

The key to the situation is control of production in East Texas, and if East Texas cannot be controlled the agreements might just as well be thrown out the window, he continued.

The status of trackside station on contracts depends on whether they do a wholesale or retail business, he said. It is the duty of the refiner to determine the type of business done by the particular station in question.

Lease and agency contracts have to be cancelled, and hearings will be held by the government on the validity of contracts held by two companies claimed to be non-cancelable, he said.

IN HIS general speech Mr. Majewski told jobbers that the Standard Oil Co. of New Jersey would be prosecuted to the fullest extent, that there would be no compromise, and that if the New Jersey Standard should win, the company would find that something would be added to the code that it would not like.

"You can always skin a cat," he said, "but it takes longer to skin a big one."

Public opinion, not legal regulation, will hold companies in line on the code, he continued, pointing to damaging publicity to a company attempting to break down the code. He predicted it would take the New Jersey Standard two years to live down its fight against the code suit.

Mr. Majewski also predicted that the day of lawyers wrangling over legal phraseology is out, and that the oil business is being run from a practical standpoint by practical oil men not concerned with legal terms but knowing how to make a dollar.

On the question of dealer representation on the P. and C. Committee, he told jobbers he would give up his place, and help a dealer win the seat, but first he wanted to know if the dealer knows anything about the oil business. "I learned the oil business, starting back in

1910, from both ends of a mule," he said.

He then challenged reports from dealers that they would not abide by the code unless they had a representative on the P. and C. Committee, pointing to the fact that they are operating under the code and that the government does have a hand in their business. He advised anyone wanting to blow off steam to defy the code to go slowly, as public opinion would get them.

Mr. Majewski declared the most wonderful part about the code was that it was free of politics, that even U. S. senator's do not have five cents worth of influence. He urged jobbers to see that men committed to backing up the President's program were sent to Washington, to support the man who made it possible for jobbers to stay in business.

E. H. Pedley, D. B. Pedley & Son, Kenosha, and president of the association, presided at the convention. J. S. Harrison, Cities Oil Corp., Milwaukee, was presented as the man who took over responsibility for running the convention.

Roy S. Brecke, secretary, in his report told jobbers that during the past year 29 district meetings were held with total attendance of over 1400 oil men. He reported on various code meetings throughout the state, and briefly reviewed the legislative situation in the latest session.

The second day's program headliner was Mr. Majewski. Other speakers were W. J. Aberg, Madison attorney for the association, and E. L. Barringer, National Petroleum News.

Mr. Aberg reviewed the work in the legislature, pointing to a record of having all association measures passed, and only a few unfavorable bills were passed. In all about 75 bills directly affecting the oil business were passed.

Jobbers should be alert for gasoline tax fund diversion, he warned, as a million dollars was taken in 1933 for unemployment relief in Wisconsin from gas tax funds and this may be a forerunner of what may be expected in the future.

Addresses on advertising and gasoline taxes and an open forum discussion of the marketing and pooling agreements, with particular reference to the new standard contract forms constituted the program for the final session.

Oil companies will have to sell their products on a basis of merit in the future to a greater extent, since the petroleum code has forbidden the giving away of premiums as an inducement to buy, jobbers were told by Irwin Maier, advertising manager of the Milwaukee *Journal*. This means that advertising is coming into its own, as sufficient advertising of the right type must be used to get business. Then it is up to the oil company operators to hold that business and get the customer to return, he said.

In connection with their advertising, Mr. Maier told the jobbers not to copy their competitors but to find out what was right for their own business and then use it. He said that their products probably were unlike any others and would need to be advertised differently.

All dealers in Wisconsin now are under license and have furnished bonds, said Robert K. Henry, state treasurer, in this talk. At present we have only three delinquent accounts in the state, he continued.

Much of the expense and difficulty in handling the gasoline tax work is caused by refunds to farmers for gasoline not used for automotive purposes, Mr. Henry said. Oil companies could help this situation considerably by seeing that the farmer understood the law, he asserted. The tax department now has 26 extra people handling refunds alone, it was stated.

H. A. Rohde, Rohde Oil Co., West Allis presided at the closing session. He stated that all the oil jobber asked was an opportunity to sell merchandise on an equal basis.

Wisconsin, Michigan Jobbers Seek 2 1-2 Cent Margins

CHICAGO, Jan. 27

JOBBERS in two states in the northern part of the central west this week protested the 2-cent jobber margin in the new marketing agreement. These states are Wisconsin and Michigan, and jobbers asked for a minimum margin of 2.5 cents.

Wisconsin jobbers took action at the convention of the Wisconsin Petroleum Association, in Milwaukee, Jan. 24. The resolution asked for a 2.5-cent margin and instructed the association secretary to contact jobbers through their associations in Michigan, Minnesota and North Dakota. The intent of the action is to support the recent resolution of the National Oil Marketers Association and ask a hearing to present the case for longer margins.

Michigan jobbers at the Michigan Independent Petroleum Distributors Association meeting in Lansing Jan. 25 adopted a resolution to telegraph Oil Administrator Ickes requesting a minimum margin of 2.5 cents above the undivided dealer's margin.

At the Wisconsin convention B. L. Majewski, Deep Rock Oil Corp. and member of the Planning and Co-ordination Committee, in his address told jobbers that the question of longer jobber margins was pertinent to operations in the mountain territory of New Mexico, and in the sparsely settled sections of northern Montana and western North Dakota on account of small volume and long truck hauls to dealers and consumers.

Jobbers in the northern part of Wisconsin and Michigan report a 2-cent margin generally insufficient on account of long hauls, and also on account of shrinkage through the winter months. Commissions paid truck operators by some jobbers is 2 cents a gallon.

In discussions from the floor at the Wisconsin convention Mr. Majewski cited a study by the oil administration in determining margins. Cost figures, he said, from about 1100 jobbers, none in larger centers of population, showed an average operating cost of 5.62 cents a gallon. This figure included a 10 per cent return on the investment.

Mr. Majewski pointed out to

jobbers that the average cost has to be considered, and later in the session, when the resolution was under discussion, he counciled jobbers to seek a hearing at Washington to present their case.

While the resolutions in both states ask for 2.5-cent margin, some jobbers hold the opinion that the minimum should be 3 cents. At the Michigan meeting one jobber spoke in favor of an even division of the 6 cent margin, 3 cents to the dealer and 3 cents to the jobber.

Present Code Cases To Grand Jury

MILWAUKEE, Jan. 27.—Cases against two Milwaukee dealers, charged with code violations, are expected to be taken before the federal grand jury within the next two weeks.

Commissioner warrants have been issued, and the dealers posted $1000 bond.

The dealers are Robert E. Lee, operating a parking lot and service station, charged with violating Art. V Rule 17. It is claimed that Lee gives free automobile parking with a purchase of $1 or more.

The other case is against Roy Clark, station operator, charged with violating Art. V Rule 3. It is claimed that the posted price at Clark's station is 95 cents for five-gallons of gasoline, but that he made sales of five gallons for 93 cents.

Refinery Runs Reduced Slightly in December

WASHINGTON, Jan. 30.—Crude receipts by refineries in December totaled 72,556,000 barrels, an average of 2,341,000 barrels daily, the U. S. Bureau of Mines reports. Crude runs to stills averaged 2,272,000 barrels daily, a decline of 10,000 barrels from November.

Receipts of foreign crude increased 26,000 barrels daily average to 101,000 barrels per day. Crude stocks at refineries increased to 66,049,000 barrels.

No New Indictments Handed Down By Federal Grand Jury

LOS ANGELES, Jan. 26

NO FURTHER public action was taken by the federal grand jury here in its investigation of alleged violations of the oil code. Many witnesses appeared before it in connection with charges that the marketing provisions of the code had been violated by practically all branches of the industry, including majors and their affiliates, jobbers and retailers.

Much of the testimony related to the sources of supply of approximately 40,000 gallons of bootleg gasoline estimated to be sold daily in the Los Angeles Basin area, through about 30 service stations.

Evidence showed that some of this was brought by truck from the lower San Joaquin Valley and most of the remainder from small refineries within the Basin itself.

In an effort to eliminate this business by bringing pressure to bear on those involved, trucks were followed from the refinery to destination by investigators. All parties to the transaction, including refiner, jobber, truck owner and retailer, were then summoned before the grand jury.

Delay in taking action on these cases and others already investigated was presumed to be due, at least in part, to the fact that for the moment the grand jury had to divert its attention from the petroleum industry to CWA scandals.

Service station operators that sell below the established retail price also received the special attention of the state department of weights and measures during the past week. L. S. Balridge, operating a service station at 3718 Beverly Boulevard, was convicted on Jan. 19 of offering for sale a blend of two gasolines and thus substituting a grade inferior to that advertised on his pumps. Balridge was ordered to appear for sentence on Jan. 29.

The attitude of the state department of weights and measures, which controls inspections of oil and gasoline, is that any form of substitution is illegal. The department has announced that it will prosecute all forms of substitution, including even the offering of gasoline in place of the so-called "motor fuel," which is a blend of gasoline, kerosine and casinghead gasoline.

Officials of Pacific Coast marketing organizations followed with particular interest announcements of developments connected with the marketing and pooling agreements originally submitted to Secretary Ickes on Dec. 7.

Major company officials expressed general approval of the agreements, but jobbers of petroleum products both in the domestic and export markets showed considerable concern as to the provisions in it relating to their operations. They expressed the fear, shared by many independent refiners, that organizers of the pool did not view the operations of jobbers and the independents as permanently necessary or desirable.

In their opinion, success of the plan will depend largely on the spirit in which it is operated and on whether it is allowed to serve sectional interests or is directed to serve the best interests of the industry and of the public.

They were favorably impressed by the attitude of Secretary Ickes' statement that he doubted whether the proposed jobbing margin of 2 cents a gallon was adequate, by the provisions to review this clause of the agreement at the end of a trial period, and by the further fact that a number of refiners would remain outside the pool to serve as sources of supply to independent jobbers and retail distributors.

Jobbers In Michigan Organize Independent Association

LANSING, Jan. 25

JOBBERS in Michigan organized a new association Jan. 25 in Lansing, adopting by-laws, and electing directors and officers. The organization will be the Michigan Independent Petroleum Distributors Association.

Active membership will be open to firms or persons of high character directly in the business of distributing petroleum products from bulk stations in Michigan or by tank wagon deliveries, excepting refiners, providing they own 51 per cent or more of their business. Equipment companies may become associate members.

Seven directors were elected from the floor. They are: R. P. Fleckenstein, Phil-Flint Oil Co., Flint; J. F. Wilson, Star Oil Co., Port Huron; Harold L. Merritt, Peerless Oil Co., Bay City; J. H. Kelly, Jackson Oil Co., Jackson; V. J. Kahler, Kahler & Friend, Petosky; John A. May, Community Oil Co., Charlotte; and L. D. Maxon, Central Service Co., Lansing.

Directors elected the following officers: J. F. Wilson, president; J. H. Kelly, vice-president; and L. D. Maxon, secretary-treasurer. Charles Goff was employed as field secretary. Headquarters will be in Lansing.

The by-laws also provide for ten district representatives who will keep the board and association informed as to affairs in their territory.

Semi-annual meetings will be held on the second Tuesday in April and October. Directors will be selected at the October meeting. Special meetings can be called on ten days notice by the president, the board, or by petition of one-third of the members.

About 75 jobbers from various parts of the state attended the meeting.

Jobbers in Michigan considered an independent organization was necessary to protect and promote their interest. The previous state-wide organization was the Michigan Oil Men's Association that was disbanded two weeks ago.

Federal Taxes Higher

WASHINGTON, Jan. 23.—Latest figures on federal taxes affecting the petroleum industry, given out by the National Petroleum Association, show government receipts for 1933 to be from three to four times the receipts of 1932. In comparing these figures it should be recalled that these taxes were inaugurated beginning July 1, 1932.

For lubricating oils, receipts of $7,067,000 in 1932 were swelled to $22,290,000 in 1933. Gasoline tax receipts increased from $62,840,000 to $181,126,000, and pipeline taxes amounting to $2,578,000 in 1932 came to $10,237,000 in 1933.

Brown Named President Of Foster Wheeler

CLEVELAND, Jan. 29.—J. J. Brown, chairman of the board of Foster Wheeler Corp., has been elected to fill the presidency of that company, following the death of former president L. B. Nutting, which occurred on Jan. 12. The new president retains the board chairmanship.

L. B. Nutting had been in the employ of the Foster Wheeler organization, and its predecessors for a number of years, and was chiefly instrumental in combining the Power Specialty Co. and Wheeler Condenser and Engineering Co., some years after the World War, to which combine the present name was given. He became president and director of this company, the position which he held at the time of his death.

He was also active in the direction and management of several foreign subsidiaries of the parent company, including the Canadian, British and French branches. At the time of his death he was a director of Petroleum Distillation Corp., a member of the Bankers Club of America, and the American Society of Naval Engineers.

Daily Average Production, Important Districts, American Petroleum Institute Figures

	Week Ended Jan. 27 Barrels	Jan. 20 Barrels
Okla. City	155,100	217,550
Total Okla.	467,350	534,750
East Texas	396,000	383,450
Total Texas	890,950	881,250
California	449,900	458,600
East of Rockies	1,772,850	1,836,000
Total U. S.	2,222,750	2,294,600
Crude Imports	61,000	123,860
Total New Supply	2,283,750	2,418,460

Refinery Men to Accept Labor Board Findings

HOUSTON, Jan. 26. — Shell Petroleum Corp. refinery workers are continuing their jobs as usual at the Houston ship channet plant after deciding to accept findings of the National labor board in their dispute with the company.

The workers agreed at a meeting Jan. 23 to postpone definite action looking toward a "walkout" until their case had been presented to federal code authorities and labor board members. Action had been threatened because the Shell would not meet their demand for higher wages. Shell officials announced that with one exception their wage scale is the highest paid in the southwest.

Decision of the workers capped a day of argument among them. They met in the morning and then sent a committee at noon to W. Mullemeister, refinery superintendent, who told them their wage demands could not be met unless other companies raised their operating expenses and retail prices for petroleum products.

It was announced a telegram from William Green of the American Federation of Labor asked for time in which federal labor agencies might act.

Ickes to Adjust Differences Between Oil and Allied Industry Codes

WASHINGTON, Jan. 27 ACTION by Oil Administrator Ickes to prevent seemingly inevitable conflicts between the oil code and NRA codes for industries which are a part of or closely allied with the oil industry is believed near.

Codes covering pipeline construction, rig building, erection of tanks, natural gas, salvage and other industries which overlap the oil code have been filed with the National Recovery Administration.

Provisions of these codes, particularly the labor sections, vary widely from the oil code though in many instances the subject matter covered is identical.

Many instances of conflict between the oil code, under administration of the Interior Department, and these codes under NRA, are cited by oil men who have made a study of the matter.

For example, if an oil company contracts for pipeline construction, erection of tanks, rig building, construction at refineries and the like, the work would be done in conformance with NRA code. But if the company did the work itself, provisions of the oil code as to wages, hours and other conditions would govern.

In the natural gas code, wages are less and hours longer for drilling operations than the 36-hour and 45 to 52-cent minima set up in the oil code for identical work.

Sponsors of the rig building industry's code are still undecided whether to have a separate NRA code or come in as part of the oil code.

The opinion is growing that Oil Administrator Ickes will soon have to take steps to avoid these conflicts. The number of overlapping codes being filed at the NRA is increasing. However, most of them have not been acted on.

It is suggested that Administrator Ickes delegate a joint committee from the Petroleum Administrative Board and the Planning and Co-ordination Committee to confer on the matter with General Hugh S. Johnson, NRA administrator.

One solution mentioned is that Administrator Ickes insist that overlapping NRA codes conform with provisions of the oil code where the subject matter is the same.

The difficulty with that, however, is that there would be still a possibility of conflict with the NRA enforcing its codes and the Interior Department administering the oil code.

It may develop that administration of all codes affecting the oil industry will be turned over to the Interior Department. To many observers, this appears to be the only practical solution of the problem.

Month to Month Basis Used On Navy Fuel Purchases

WASHINGTON, Jan. 27.—The Navy is purchasing its fuel oil on a month to month basis "until conditions in the oil industry become more settled," it was brought out at hearings on the Navy Department appropriation bill now pending before Congress.

Price advances of from 40 to 60 per cent over existing contract prices led to rejection of all bids for the 6-month period and a decision to make purchases monthly, said Rear Admiral Peoples, chief of the bureau of supplies and accounts. The bids referred to were opened Nov. 17.

The three lowest bidders — Standard Oil Co. of N. J., Mexican Petroleum Corp., and Colonial Beacon Oil Co.—included in their bids, according to Admiral Peoples, a "hedge clause" which would increase the bid prices by reason of increased costs due to the NRA, currency inflation, or other causes.

Another factor in rejection of the bids, Admiral Peoples indicated, was the imminence, at that time, of Government price-fixing for the oil industry.

Transfer of the U. S. Fleet this spring from the Pacific to the Atlantic will require 1,574,000 barrels of fuel oil, with a similar amount necessary for the return trip next fall. Fuel oil requirements for the Navy during the fiscal year beginning July 1 were estimated at 6,580,327 barrels, which is in addition to the amount needed for the inter-ocean trips.

The Navy appropriation bill carries a clause prohibiting the purchase of foreign oil even though oil produced in the United States may cost more, provided the excess cost in the opinion of the Secretary of the Navy is not "unreasonable."

Tax Differential Irks Virginia Dealers

WASHINGTON, Jan. 27.—Independent gasoline dealers of Northern Virginia have threatened to close their stations unless some means is devised to permit them to compete with dealers in Washington where the gasoline tax is 3 cents less.

Until recently, the oil companies have absorbed 2 cents of the 5-cent tax in Virginia and the retailer, 1 cent.

Under the marketing agreement approved by Oil Administrator Ickes, this practice will have to stop, the suppliers are reported to have informed the dealers.

The dealers are appealing to the Petroleum Administrative Board to solve their problem.

Representative Smith, of Alexandria, Va., has introduced a bill in Congress—which has exclusive jurisdiction over the District of Columbia—to increase the D. C. gasoline tax from 2 to 4 cents, presumably to permit his gasoline-dealer constituents to compete on an even basis with Washington stations.

The bill also provides that such gasoline tax receipts should be turned into the U. S. Treasury for use by the District. At present gas tax receipts are earmarked for street improvements.

State Allowable in Texas 15,000 Bbls. Over Federal Crude Allocation

HOUSTON, Jan. 27

COMPLETIONS in East Texas have automatically increased the field allowable there to 397,497 barrels daily and thereby brought the all-state total to approximately 900,000 barrels of permitted production under railroad commission proration orders.

Upward adjustments in field allowables elsewhere in the state in the last two weeks, principally in three or four Gulf Coastal pools and a number of West Texas areas, were also partly responsible for the commission figures exceeding the federal allocation of Oil Administrator Ickes by approximately 15,000 barrels daily.

The federal allocation to Texas for the first quarterly period of 1934 was fixed at 884,000 barrels daily as compared with 871,000 barrels constituting the all-state total under state railroad commission orders Jan. 1. The adjustments that have been made progressively in various Texas fields since Jan. 10, including some orders in the Gulf Coastal area retroactive to the first of the year, have since increased the permitted yield to its present commission total of approximately 900,000 barrels.

In East Texas, where no top allowable exists, each completion gains its share of production at the rate of five per cent of the hourly potential, except that wells incapable of making more than the statutory marginal well allowance of 20 barrels may produce all they can.

Two additional companies and two more individuals operating field properties in Upshur and Smith counties, East Texas, were under court restraint at Longview this week in the state's drive to stamp out production and movement of crude above commission allowables.

Enjoined at the instance of the attorney general's department were the Concord Oil Co., operating in Smith county, and the Taxman Refining Co., operating in Upshur county. Individuals named were T. P. Nash and E. E. Roney. All four suits alleged overproduction.

Bottom hole pressure tests taken on 88 key wells in East Texas for proration purposes showed that weighted average pressure decline of five pounds had taken place between Dec. 10 and Jan. 17. The Jan. 17 average was 1269 pounds, according to figures only now available. Highest pressure recorded was on Mid-Kansas Oil & Gas Co.'s lane lease in Cardena survey, Rusk county, where reading was 1433 pounds, and lowest was Stanolind Oil & Gas Co.'s Siler lease at 290 pounds.

The Texas legislature convened in special session at noon Jan. 29 to deal with relief bond issue and other similar problems. At present the oil industry is not directly affected by any proposed legislation, but it is inconceivable any Texas session can be held without petroleum legislation being considered before its end.

Prepare to Prosecute Code Violators in Texas

WASHINGTON, Jan. 27

Indication that Oil Administrator Ickes is preparing to crack down on East Texas violators of production curtailment orders was seen today in his announcement of a plan for slashing some of the "red tape" which has delayed prosecutions in Texas.

Attorney General Cummings and Administrator Ickes have agreed to let the two Special Assistants to the Attorney General now in Texas begin prosecutions without requesting authorization from Washington. Formerly, specific authority from the Attorney General had to be obtained in each case.

These special assistants, who are also attorneys on the Petroleum Administrative Board, are Charles I. Francis, at Tyler, and LaVergne Francis Guinn, at Dallas.

They will co-operate with the U. S. District Attorneys in Texas in bringing immediate action against all reported violators, it was said.

In his announcement, Administrator Ickes reaffirmed his belief that the majority of Texas operators are making an honest endeavor to comply with the oil code and state and federal regulations on production.

"There is a very small minority of violators," he added, "who persist in making selfish attempts to destroy the entire petroleumn industry by refusing to join with their neighbors and colleagues in a co-operative effort to prevent chaos.

"I am advised by reputable and responsible oil men from all factions in the industry—independents, minors, and majors—that in Texas the basic opposition to the program for stabilization approved by the President and the oil industry comes from the ruthlessly selfish minority desirous only of gobbling up quick profits at the expense of fair-minded and honest operators.

"This betrayal of the common welfare of an entire industry by an unprincipled minority cannot be tolerated, nor will it be," the Administrator emphatically declared.

* * *

By Telegraph

WASHINGTON, Jan. 30.—Oil Administrator Ickes announced today that additional enforcement agents will be sent to Texas to aid in handling the "hot oil" situation there. Further details of the enforcement plan will be announced soon.

Fine Tax Evader

CHICAGO, Jan. 26.—Ben Burakoff, operator of the Blue Star Oil Co., Chicago was found guilty of evading payment of state gasoline taxes and fined $10,000 by a jury in a Chicago court Jan. 25. Sentence was withheld pending a hearing on a motion for a new trial.

Mr. Burakoff's defense was that he had not been able to collect from his customers and hence was unable to pay the state.

East Texas Water Table Rise is Slow; Production to Flow Through 1934

By Lawrence E. Smith
N. P. N. Staff Writer

TYLER, Tex., Jan. 30

A VERTICAL water rise of one-eighth inch per day in the Woodbine producing sand of the East Texas field isn't much of a rise. That means one foot in about three months. It will be some years before water shall have moved from the western edge of this tilted sand body to the high side on the east, limit of production.

The original water table of the field, which in everyday language means that point where the water was in contact with the oil, was at 3320 feet below sea level. Information on 378 wells reveals that the total vertical rise to a recent date was 9.8 feet. A total rise of 250 feet is necessary before the water reaches the extreme east side, or until the oil sand has been completely filled with water.

The belief, usually based on hope, held by some that the field would "go to water" is a long way from realization. It will continue to flow its production throughout 1934 and will continue to be the subject of restrictive orders, investigations and litigation.

There was a period early in 1933 when it appeared that the field would soon end its flowing life. The pressure at the bottom of the wells was falling rapidly, due to the production of approximately one million barrels daily over a period of several weeks. Operators began to buy pumping equipment. Motors, gas engines, derricks, band-wheel powers, jacks—all the numerous items that are needed in producing oil—were moved in quantity into the field. It was great for the supply companies, for the purchases ran to more than a million dollars.

Some of the orders were cancelled before delivery, as the turn in the course the field was pursuing had come. Much of the new equipment was installed on leases and there it sits today. It will be ready when needed, but with reasonable control in the field it does not now appear that it will be needed soon.

What happened was a partial restoration of pressure. This was the result of smaller daily withdrawals. At one time, in July, 1933, the average pressure of the field was calculated to be 1223 pounds per square inch. Gradually this has been restored and now stands a little above 1270 pounds.

Maintenance of a pressure sufficient to flow the production is dependent upon gradual withdrawals of oil from the reservoir. The water moving in from the western edge advances at a fairly definite rate. If the oil is withdrawn rapidly there is a lag in this pushing force and there is a drop in pressure when measured at the bottom of a well. The ideal rate of withdrawal of oil so as to obtain the best results from the water drive is between 350,000 and 400,000 barrels daily, a number of well qualified engineers have agreed.

To the end of 1933 the East Texas field had produced a round total of 428,000,000 barrels of oil that was accounted for. The estimates of unreported production range from 60 to 100 million barrels. It is a fair guess that the field has actually made, in its slightly more than three years of life, more than 500 million barrels.

The amount of oil yet to come sounds like a national budget figure under the New Deal. Originally, engineers have calculated, the field had in place 7,910,000,000 barrels. That would be quite frightening and would mean at least six years supply yet for the entire U. S. if all of it could be called recoverable. Taking the favorite figure of 40 per cent recovery, a figure of 3,164,000,000 barrels final yield would be indicated. But this would be reduced substantially. The 410,155,000 barrels produced to Nov. 18, for example, has been calculated to have been 590,000,000 barrels in place. Loss of gas in solution and other physical changes in the oil reduced its volume in the amount indicated. To apply this factor of shrinkage as a constant and to assume a 40 per cent recovery would indicate a final yield for East Texas of 2,196,000,000 barrels, of which about 23 per cent is supposed to have been produced.

It is estimated that 62,400 acres in the field are now underlain by water. This does not mean that water is being produced with the oil over that much of the field's total of 116,000 acres, merely that water is present.

Under sustained heavy withdrawals in any part of the area where water exists, a coning action would result. That has been the case in a number of scattered parts of the field. Differences in porosity and density of drilling have prevented the advance of water from the west from being uniform. There has been an abnormal rise in the water table because of such factors and because of the heavy withdrawals of oil.

ON Nov. 15 there were 581 wells making water. Of these 478 were definitely known to be affected by water from the Woodbine sand and the other 103 were on the east side of the field beyond the present supposed zone of Woodbine water intrusion. This group were either getting water from upper horizons through faulty casing or had been drilled too deep.

The total number of water wells probably is less now than on Nov. 15, as repair work has been performed on a number of them. Some have shut off bottom water, a few casing repair jobs have been performed. A still further reduction in the number of wells making water from other sources than the pay sand is expected, as the Railroad Commission has announced that it will enforce strictly its rule calling for repair of all wells making two per cent or more water. A consistent program of repair work can be expected from now on, as so many

wells were cased with second-hand pipe, in poor condition, and failures of this material will affect hundreds of wells.

The water problem, all in all, does not promise to be serious for considerable time. It is no problem yet as to disposal, for the field as a whole probably produces less than 10,000 barrels of water daily.

It will surprise some to learn that 1933 was the field's biggest year, exceeding 1932 by about 75 million barrels. This is to say nothing of "hot" oil, although in that respect it probably was a banner year, also. Bureau of Mines figures plus an estimate for the fourth quarter of 1933 show a production of 196,000,000 barrels. If production can be held to 400,000 barrels daily (present allowable is around 382,985 barrels), the year 1934 will fall below 1933. We speak again in terms of allowables and actual reported production.

The task of curtailing production to this figure becomes more difficult each day. Proration is based upon a one-hour potential flow of certain key wells. Each of these serves to fix the potential for a large number of other wells in the arbitrary zone which has been mapped around it. Latest revision of this one-hour potential of the field, made early in January, places this figure at 7,690,000 barrels. The allowed production is 5 per cent of the hourly rating given each well.

The application of 5 per cent to the rated hourly potential does not equal exactly the field allowable. There are many wells in the field that are being pumped or will flow only a small amount. The state law provides that these shall not be reduced below 20 barrels per day. As of Dec. 31 there were 1697 of these socalled marginal wells.

The allowable is a constantly changing figure, as new wells are drilled, given a rating and added to the list of producers. A static condition can be reached only when the final well has been drilled. The present year will not see the end of development in the field unless something quite unusual and at this time unpredictable occurs. Drilling goes on briskly—325 wells were completed in December—although the small fry producers have about run out of locations.

Many of the large tracts were drilled defensively, leaving locations back from the outer row untouched. These inside locations are being drilled now, to equalize drilling density with that on competing tracts. The considerations of drainage and effective utilization of pressure and flooding by water demand such equality in density of wells.

Predictions have been made from time to time as to the number of wells the field will finally have. Assertions were made two years ago that 7500 would be about the number when all had been completed. The estimators then moved up to 10,000. The 12,000th was completed a few days ago. Luckily no one is penalized for being wrong and students of the field are now guessing that eventually there will be 15,000 wells.

To Continue Commercial Standards Work

CLEVELAND, Jan. 29.—After having been forced last year, by the reduced appropriations of the economy program at Washington, to suspend the work of the division of commercial standards, the U. S. Bureau of Standards announces that this work will again be taken up immediately, in co-operation with the American Standards Association and other allied groups which have been concerned in the past with the work.

This decision has been reached, it is implied, because of the necessity at present "for reference to standards of dimensions and quality in the NRA code." Co-operation with organizations and industries will be resumed, for formulating and promulgating commercial standards such as are now in effect for many products in a number of industries.

The Bureau announces that, in resuming this work, it will give priority to projects regarding which the producer groups interested will signify their willingness to identify "simplified" items, dealt with by practice standards of the Bureau, in their catalogs and other trade literature. Priority will also be given to projects in which the interested producer groups indicate their willingness to employ labels on the product, which will constitute binding guarantees of compliance.

Announce Code Committee Changes In Region 3

CHICAGO, Jan. 29—Changes in the personnel of three state code committees in Region 3 were made recently. New appointments have been approved by Region 3 headquarters here, subject to approval by the Planning and Co-ordination Committee. The changes are:

Iowa, H. A. Monson, Standard Oil Co. of Indiana manager at Des Moines, resigned as vice-chairman, upon his transfer to St. Joseph, Mo.; T. V. Warren, new manager at Des Moines for the Indiana Standard, was recommended to replace Mr. Monson.

Michigan, H. H. Ragle, secretary of the former Michigan Oil Men's Association, resigned as vice-chairman. Paul R. Kempf, Staebler Oil Co., Ann Arbor, recommended to replace Mr. Ragle.

Kentucky, R. R. Johnston, Gulf Refining Co. district sales manager at Louisville, resigned as vice-chairman upon appointment as district sales manager at Toledo. W. F. Gardner, Standard Oil Co. of Kentucky, manager for Kentucky, was recommended to succeed Mr. Johnston.

British Gasoline Prices Expected To Rise

LONDON—An early increase in the price of gasoline in the British market is expected by Walter Maclachlan, chairman of the Apex (Trinidad) Oilfields. In his speech at the annual meeting, just held in London, he cited this as one of the reasons for anticipating a satisfactory year, another being the increased demand which should arise from the improvement of trade in the United Kingdom. Mr. Maclachlan expressed the view that encouragement could be derived from the progress which America is making towards stabilization of the oil industry.

The PANORAMA of PETROLEUM In The MID-CONTINENT

By Lawrence E. Smith
N. P. N. Staff Writer

THE state of Oklahoma was overproduced 15,053 barrels daily for December, according to the report for that month issued by the proration department of the state Corporation Commission.

Oklahoma City field was responsible for 6113 barrels of the excess; the class B pools—mostly in the Seminole district—for 6655 barrels. Unprorated areas contributed 2383 barrels of the overage; however, the daily figure of 172,383 barrels from unprorated pools is subject to correction. Tax Commission figures on gross production taxes will be used to check the reports supplied by pipeline companies.

It will not be surprising if the January excess is greater than that for December because of the commission's habit of manipulating the unprorated fields' allowable. No orders govern these areas and there is no allowable except the overall figure, which is merely a "finding" by the commission that these dozens of pools will produce a stated amount.

The commission's order governing December said these unprorated areas would yield 170,000 barrels daily. For no asserted reason it "found" that the same wells would yield 159,400 barrels in January and its new order says they will make that amount in February. There really is no reason to expect a lesser amount from them in February than in December, when they exceeded their 170,000-barrel quota. Only a sustained spell of freezing weather would keep them down to their assigned figure. And the Oklahoma winter has been quite mild.

The order of the commission for February makes no change in the state's quota, 446,600 barrels daily, nor in the amounts allotted to the several pools, with one or two trifling exceptions.

Another Way of Beating the Game

As soon as he can get around to it, this writer is going to East Texas to gather information which will be published as a manual for those operators in future pools who wish to defeat whatever proration and conservation rules that may be adopted. It is believed that no new device or method will ever be discovered. Everything has been thought of in East Texas and proved in actual practice.

Information in the trade the past week was that some 6000 barrels of crude oil are being moved daily from the field in tank cars, billed as topped crude and fuel oil. Federal warrant is supposed to have been issued for the arrest of one individual. The charge was said to be that he had sworn falsely as to the contents of certain tank car shipments.

The current "drive" by federal and state authorities has resulted in a large number of injunctions and one judgment for $10,000. Along with this a wave of publicity appeared to the effect that hot oil was rapidly being dried up. If that is true, it is merely a recurrence of the reforms which hit the field every so often. While the prosecutors are active, the violations die away. They are resumed when the policeman leaves his beat.

Some well informed persons doubt that the production has really dropped to anywhere near the allowable, which on Jan. 24 was 397,497 barrels daily. The reported production for the week ended that day was 396,417 barrels while movement from the field, including runs to refineries in the field, averaged 498,565 barrels per day, according to one organization. The excess of runs over *reported* production was 102,148 barrels. Railroad Commission figures on runs show the excess to have been 65,000 barrels.

Whatever the excess is, some part of it just has to be illegal production. As has been shown repeatedly in these columns, the excess of deliveries over reported production has continued over so long a period that, as an overall consideration, there cannot be any storage on which to draw. That is to say, legally produced storage. Some companies doubtless have storage which was produced in accordance with the rules, but other "storage" has been emptied and filled repeatedly.

The game continues to be attractive, apparently, for three more "pots" are being built in the field. There were 42 in operation last week and 13 that were shut down.

"Efficient federal regulation of the oil business, in co-operation with the Texas authorities, has been severely handicapped by pending litigation challenging the constitutionality of the National Industrial Recovery Act and the petroleum code and Department of Interior regulations adopted thereunder," said Charles I. Francis, special assistant attorney general of the U. S. and assistant solicitor for the Department of the Interior, in a statement this week.

"These matters are now finally submitted for decision in three important cases which the courts have under advisement; one, the Amazon Petroleum case, pending before a statutory three-judge court at Houston; another, the Panama Refining case, pending before U. S. Judge Bryant, and the third, the Locke Drilling Co. case, pending before the U. S. Circuit Court at New Orleans.

"If the government is successful in this litigation it will vigorously push the prosecution of numerous criminal cases now pending and others that will be immediately filed against the well known violators, a small minority which has pursued a

course of banditry rivalling the racket of Al Capone . . . . .

"It is clear that federal regulation can not be successful unless the Department of the Interior can require sworn reports from producers, refiners and pipelines, as required by law; and it is absolutely essential that the federal oil enforcement officers have free access to leases, refineries and pipelines to verify these reports and to detect violations not susceptible of legal proof in the absence of direct evidence which cannot be efficiently secured in any other way. Until the courts grant this right under existing laws and regulations, our efforts must fall far short of what every honest citizen has a right to expect of his governmental agencies."

Mr. Francis called upon royalty owners and operators having definite proof of violations to supply it to the federal agents at Tyler.

The permission to have free access to leases, etc., which Mr. Francis said was essential to enforcement, was recently denied by Federal Judge Bryant in issuing several injunctions against alleged violators.

Ryan Still in East Texas

A. D. Ryan, Department of the Interior investigation agent, who went into East Texas in charge of enforcement work when the federal government moved into the oil business last July, is still in charge there. Recently it was reported that he was eager to return to his former station, Salt Lake City.

J. R. Cannon, recently placed in charge of Region 12, which includes Oklahoma, has been relieved of his duties in that region and has gone to Washington. One rumor, nothing more than that, is that he will soon relieve Ryan.

Here and There

Robert W. Hendee, veteran in the service of the Oklahoma Natural Gas Corp., has been elected president. He succeeds A. E. Bradshaw who resigned to become president of the National Bank of Tulsa. Mr. Bradshaw is chairman of the board of the Oklahoma Natural. Mr. Hendee has held various positions of importance in the company in the 13 years he has been in its service. He was president once before, for about a year, until a reorganization occurred and Mr. Bradshaw came in last September.

* * *

Southwestern Petroleum Co., Inc., has been organized and has opened offices in Fort Worth, to deal in lubricants and greases throughout the country. T. H. Beall, Fort Worth, is president and Joseph P. Comyns is sales manager.

* * *

Sinclair Refining Co. announces that it will bring one of its mechanical dinosauers from the Chicago fair to Tulsa for display at the International Petroleum Exposition, May 12-19. Recently, some of the smaller - scale monstrosities have been put on display at service stations. They wag their heads and tails, roll their eyes and generally attract much attention.

Margold On A.I.M.E. Meeting Program

NEW YORK, Jan. 27.—Economics and stabilization are to be the leading subjects for discussion in the Petroleum Division of the A. I. M. E. at the 143rd annual meeting of the Society in New York, Feb. 19-22. Petroleum sessions will be held at the Commodore hotel.

Engineering research and production engineering will feature the Tuesday sessions. A paper representing the combined work of John M. Devine, C. J. Wilhelm and Ludwig Schmidt on "The Comparative Resistance of certain Commercial Ferrous Materials to Gaseous Hydrogen Sulfide Corrosion" is scheduled for the morning meeting as is also "The Measurement of Sand Permeability with a Liquid Medium" by A. J. Carlson. Titles and authors of the production engineering papers have not yet been announced.

Both morning and afternoon of Wednesday is to be devoted to a symposium on 1933 production with authoritive representatives of each producing state and foreign country reporting on activities of their assigned region.

Petroleum Economics will be discussed Thursday morning when the following papers will be presented. "A Function of Economics in the Administration of Oil Companies and Properties" by Paul Wagner; "An Aspect of the Arbitrary Restraint of Production" by John D. Gill; Supply and Demand for Petroleum Products in Foreign Countries" by Albert J. McIntosh; Analysis of the Changing Seasonal in Gasoline Consumption" by Joseph E. Pogue; Economics of Petroleum Supply and Demand on the Pacific Coast" by Allen Hand; and "The Economic Effects of the Petroleum Code" by H. J. Struth.

The afternoon session will be a round table discussion of stabilization in its engineering and legal phases. Among those who have already signified their intention to participate are; Roscoe Pound, Henry M. Bates, W. S. Farrish, E. De Golyer, W. E. Wrather, Warner Clark, Northcutt Ely, and J. B. Umpleby.

At the annual dinner Thursday evening, Nathan R. Margold, solicitor to the Interior Department and chairman of the Federal Petroleum Administrative Board, will be the leading speaker.

Former Exhibitors Take Space at Tulsa Show

TULSA, Jan. 27.—With the majority of the supply houses, and most of the leading oil companies and equipment manufacturers already signed the eighth International Petroleum Exposition and Congress, as a barometer of the oil industry, indicates that "fair Weather" is ahead, according to William B. Way, general manager.

"The option reserving space of all 1930 exhibitors at the last show free of charge until Jan. 15, is up and we find in checking that old exhibitors and new ones have already contracted for 69 per cent of the booth space," said Way.

"Exhibitors are taking more space per exhibitor this year the eighth exposition to be held here May 12 to 19 and we expect to have the largest show in our history."

The Mid-Continent Skyline

By Lawrence E. Smith

It is hereby ordered that the record show the following:

Mr. Ellick Botts,
Consulting Engineer,
Gray Horse, Okla.

Dear Mr. Botts:

Your letter about joining fraternities in the oil business is most interesting. I am a member of several of these fraternities, but not possessing a Phi Beta Kappa key. I have a very difficult piece of engineering work to be straightened out, and I think a letter from you might assist.

The Petroleum Code calls for a 36-hour week for all workers in the refining and pipeline industries. The average oil still, when it is put on stream, runs steadily for about two months; then it has to be shut down for cleaning. Very few stills run only two weeks.

The Petroleum Code calls for not over 72 hours in two weeks. Can you show me how to divide 36 hours into a shift so that it will come out even over a two weeks' period and figure 72 hours? I have been working with logarithms and geometry and have even got out my old calculus, but I cannot figure this problem out without working one man only four hours a week and giving the other men 36 hours a week. The man working only four hours a week claims that this will not keep bread and butter on the table.

If you could work out a schedule by means of logarithms or geometry that will give a man 36 hours a week and yet divide this time so that a still is kept running two months; and could divide this work into 72 hours in two weeks time, and make it come out equal, it would certainly be of wonderful assistance. If you can do this, you should certainly hang out your shingle as an operator in calendar manipulations.

We figure that if a man works six hours a day, seven days a week, he works 84 hours in two weeks time. If he works eight hours a day, five days a week, he works 80 hours in two weeks' time. This leaves the relief man working only two days a week for a small refinery, as the limit is 72 hours, and there are still six hours left over which the calculus does not explain.

Yours very truly,
Ye Olaf Calendar
(Phi Beta Clock)

P. S. Would you suggest the relief stillman shine shoes the rest of the time in order to give him 72 hours in two weeks?

* * *

THE above is self-explanatory, we hope. It was, perhaps, a mistake for the correspondent to rely upon Mr. Botts to solve this problem. He is an ideal apostle of the New Deal in that he deals always in the general, never in the specific. However, a few pointers can be supplied to this bewildered refiner which will enable him to work out the destinies of his men.

It is advised, in the beginning, that he refrain from the use of his logarithms, etc. What assurance has he, in this rapidly changing world, that they apply to this or any other situation? Why reason that a times b today equals ab? There may be something in the code that makes it equal 3x. So, avast working with what formerly were constants.

The first attack on this man's problem may be made by taking the total man hours per shift quota, which is 72. Knowing the number of men, divide so as to ascertain how many hours per day each man gets. For example, three men are told off to run one still. Each will work 24 hours in two weeks, or one and five-sevenths hours per day. In that way, he gets away from the difficulty of trying to provide some men with a wage commensurate with what they formerly enjoyed and others with part-time work. That sort of thing must go.

The essence of the New Deal is that nobody shall have more than anybody else. This philosophy is sound and should be extended to matters other than employment and business. Sports, for example, would profit. The stronger team in football should be penalized as often as necessary to keep the teams in the middle of the field and make the game end in a tie. The wrestlers have used this idea for several years, to their great profit.

If our refiner friend is old-fashioned, however, and refuses to part with his old ways, there is another route he may take. The principles of inflation are applicable to things, quantities and values other than money. That relief man who kicks about getting only four hours a week will be satisfied if his hours are made to seem more. Make his minutes 30 seconds long and you have doubled his hours. Devalue the hour to 30 minutes gold content and another doubling occurs. The result is that instead of having four hours work he has 16.

Proper manipulation of this principle will enable the refiner to put the relief man on a parity with the other men. And, just as the government keeps two sets of books on its expenses, maintain two systems of time. Work him on the inflated basis and pay him on the standard.

It is too bad that Mr. Botts was called out on a rush job and was unable to give more time to this. We are certain he had a lot of other ideas on how to meet this refiner's perplexing situation. If he didn't have, he would have fabricated some in a hurry.

Lube Classifications To Be Simplified, S. A. E. Engineers Decide

By Arch L. Foster
N. P. N. Staff Writer

DETROIT, Jan. 25. MORE specialized lubrication is the present tendency for automotive equipment, discussions among automotive and lubrication engineers at the annual Society of Automotive Engineers meeting in Detroit Jan. 22-25 indicate. That more highly specialized lubricants, and lubricating systems, are more imperative with the new designs, is self-evident. Higher speeds, greater bearing pressures, greater weight per unit of lubrication area, all necessitate the use of more carefully prepared lubricants, specially developed for a particular use. Concentrated effort is being made to further perfect lubricant and system, to safeguard properly the car mechanism of the present day.

At the same time engineers are attempting to keep the number of special greases and oils, and the grades of these, as small as possible, a development much to be desired by refiner, service agency, and car manufacturer. Granted that present car development trends make more specialized lubricants necessary for proper service, the multiplication of the number of lubricants needed in any service station may be held to reasonable limits by designing the modern car to need as few lubricants of radically different types as possible.

The extreme pressure lubrication problem which continues to occupy the center of that stage is the development and construction of a suitable test machine the results from which are reproducible, and more directly related to service performance. O. C. Bridgeman, U. S. Bureau of Standards, under whose direction the work of designing a suitable machine has been carried on, reported to the S. A. E. Lubricants Research Subcommittee, that a satisfactory machine has been designed and built. The results obtained from this machine are reproducible, and, as far as the investigation has gone, appear to correlate with service performance.

Describing the machine, Bridgeman says, in part:

"The Bureau has now completed the design of the research machine for measuring load-carrying capacity and arrangements are being made for its construction. The machine is self contained and is arranged so that wear and friction measurements can be made with it, although in the latter case a small dynamometer or equivalent is needed as an accessory.

"Provision has been made for varying the speed of the faster roll, from 750 to 3000 r. p. m. in five steps, and for each speed of the faster roll, the speed ratio between the faster and the slower roll can be varied from 60 to 6.7 by five steps. This gives a very wide range of rubbing speeds.

"The rate of loading can be varied from 20 to 350 pounds per second per inch of linear contact between the rolls. All gears are built into the machine and gear changing is automatic. The rolls, or test specimens, are readily obtainable and are similar to the cups of roller bearings.

One of the prerequisites of a suitable machine, it was decided, was that the load placed on the bearing or journal, in testing the load-carrying capacity of a lubricant, must be applied gradually and smoothly, without sudden increments of load to disturb the routine of the test. This result is attained in this machine, by connecting the journal lever, by which the load is applied, to a drum rotated through a reducing gear from the motor operating the machine. Between journal lever and drum is a calibrated indicator which shows the load on the level. The rate of addition of load is controlled by regulating the motor speed. The accompanying drawing shows the front view of the machine.

The machine may be used to test load-carrying capacity, coefficient of friction, and lubricant stability. The upper portion of the machine may be used for routine testing at a definite speed. The lower part contains the speed varying gear arrangement. On the rear of the machine are three levers for controlling the speed of the machine for research work.

Estimates are to be obtained by the special committee appointed at Detroit Jan. 25 on the cost of construction of one, five, 10 and 20 machines. Formal inquiry is to be made of prospective users of the machine, among those co-operating in the work, as to how many will purchase a machine and continue co-operation to develop a suitable procedure and test method. The progress is to be speeded up as much as is possible. H. C. Mougey, of General Motors, E. W. Upham of

PLANS for a new series of co-operative road tests to determine any further changes that may seem desirable in the Motor Method of detonation testing, are in process of completion by the C. F. R. subcommittee on detonation under chairman T. A. Boyd, of General Motors Corp. Meetings were held in Detroit, Jan. 19 and 26 to discuss the details of the test.

Many refinery technologists feel strongly that adequate, scientific cooling of engine heads and cylinders, cooling so arranged as to eliminate "hot spots," one of the main causes of detonation, should be introduced in engine design. They believe this would adjust more equitably the "depreciation" of cracked fuels which occurs with use of the Motor Method, shifting a fair part of this burden to the engine and relieving the fuel of a corresponding part. Reliable information is available that two engines are now utilizing this cooling principle, to operate at greatly increased compression pressures, as high as 130 lbs., on 70 octane number fuel, without a semblance of detonation.

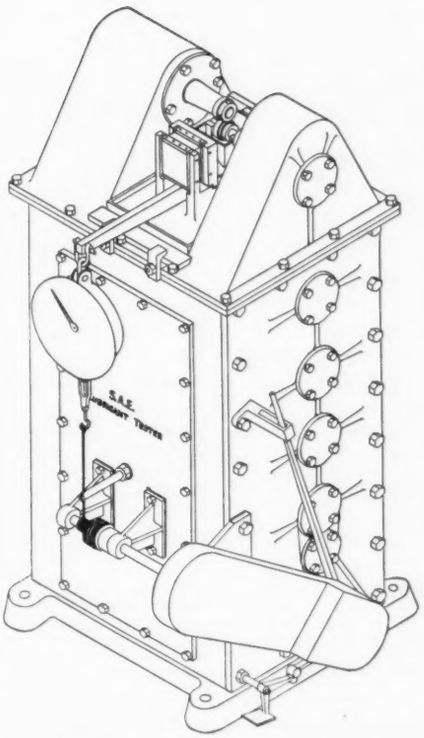
Chrysler Corp., and C. B. Veal of the S. A. E., are the committee to co-operate with Bridgeman in the construction of the machine.

A concerted effort is being made to clarify and simplify the situation regarding chassis lubricants. Survey of the recommendations for these lubricants for 1933 cars, according to A. J. Blackwood and A. C. Spencer, Jr., Standard Oil Development Co., shows that more than 100 different lubricants were recommended by the various makers. From the point of view of the lubricant maker, and the problem of supply, such a condition is preposterous. About the only explanation of this condition, which appears reasonable, is the fact that transmission lubricants have formerly been recommended and used largely for this purpose. Development of specific oils and greases for the several chassis purposes has gone on recently until the entire situation approaches chaos. This normally means that the customer is very unlikely to obtain the type of lubricant that is needed for his job, with resultant possibility of poor service.

The subcommittee on chassis lubricants, under H. C. Mougey, determined upon some changes in the five grades of lubricants for this service, which were first suggested by Mougey last October at the A. P. I. meeting in Chicago.

Free-wheeling designations have been dropped from the specifications, by many car makers, and the entire transmission lubricant field is under scrutiny by the subcommittee in charge. It was clearly demonstrated that the present system is unsatisfactory, and the efforts of the subcommittee in the future will be directed toward a more serviceable classification.

It has been found conclusively that the classification at 100 F. is totally inadequate to give a satisfactory indication of the properties of the lubricant. More information must be given about the viscosity of the material at lower temperatures. Unlike the straight mineral crankcase oils, extrapolation of viscosities on the A. S. T. M. chart cannot be employed to determine those lower temperature viscosities. It is necessary to develop some basis of classification which will indicate more exactly the variance of characteristics with temperature, etc., before these difficulties can be overcome. Both straight mineral, and compounded transmission lubricants are to be studied under a systematic plan.



Front view of Extreme Pressure lubricant testing machine, developed as the first step in formulating a standard test for extreme pressure properties. The upper portion, above the rectangular cross-sectional portion, is the test machine proper; the box-like lower portion contains the gears for speed variation, and for operating the loading mechanism

Blackwood and Spencer point out that, among other things, shackle lubrication will be simplified if car makers design equipment for gun grease instead of oils. Use of a water resistant grease, containing lime or aluminum soap, would greatly reduce leakage and water intrusion, and lubrication will be adequate and certain. They also recommend for steering gears a heavy fluid grease preferably of the E. P. type, and ask the car designer to provide against leakage, give proper fill and drain plugs at the proper levels.

Because of the serious protest from car users against the bother and extra expense of lubricating clutch release bearings as now provided on cars, these authors recommend that the fitting for this service be placed under the hood, easily accessible, rather than beneath the floor boards. They point out that it requires 45 minutes on two makes of cars, to do this one lubrication job.

Increased speeds and use of four-wheel brakes have intensified the problem of front wheel bearing lubrication. The grease must be water resistant, and more especially heat resistant, because of higher running temperatures. These authors believe a fairly viscous mineral oil compounded with a soda soap, will serve best for this purpose.

As Blackwood and Spencer point out, the greatest difficulty in the making of specialized, compounded lubricants, is that grease-making is still an art, rather than a science. With exactly the same ingredients, and compounding under approximately the same conditions, wide variations occur continually in the product, due to probably slight variations in temperature, time, etc., in manufacture. They believe that a classification system based on the properties of the finished products rather than on ingredients or manufacturing methods, will prove the only satisfactory one. They suggest a rudimentary classification, based solely on water and heat resistances, stability and consistency, as the fundamental basis for classification. The committee on chassis lubricants is expected to consider all these problems intensively before making up a final suggested classification.

H. E. Churchill, Studebaker Corp., in outlining the developments and trends in chassis design and lubrication, deplores the increase in number of lubrication points during the last few years. The use of rubber shackles contributed to the low number of points in 1929, which reached 46; in 1932 the adoption of ride control and engine accessories requiring lubrication raised this number average to 55, the "high" for all time. With the new front wheel suspension, this number is increased in many 1934 models.

He stated that the problem of spline shaft lubrication can

be, and is simplified by the removal of the splines from the shaft to transmission or rear axle pinion where the lubricant at those points will do the job and eliminate this difficulty.

The outstanding feature of this entire meeting was the large amount of meticulous planning by committees and subcommittees on future work. By far the greater part of the work of the meeting took place in committee rooms. The work accomplished and planned is most of it of a fundamental nature, indicating radical changes in classification of lubricants, in methods of test, in their composition. Chassis, transmission and extreme pressure lubricants are to receive a complete "workover," and plans are to accomplish these jobs in permanent, not temporary, manner, to lay out systems which will simplify and place the entire problem on a more exact, rational basis.

Too much attention cannot be given to the matter of standardization of specifications, and of design of equipment. Automotive and refining engineers alike should keep these two ideas eternally in mind. To increase the already huge number of lubricants needed, many varying only slightly in purpose or properties, is an injustice to refiner, to motor maker, and to the consumer. To even continue the present number, or any number approximating the present exhaustive list, is reasonless.

The desired result can be accomplished by simplifying design of equipment with standardized lubricants in mind. Build them so a few lubricants will do the entire job. And make those lubricants standard, to definite specifications and properties, so that properties necessary for the work to be done may be obtained with certainty.

It is inconceivable that the automotive industry needs so many different types of equipment requiring a hundred different lubricants to do what is really a half-dozen specific jobs. It is equally inconceivable that the refining industry cannot produce a series of lubricants, small in number, which will do every job required of them, the properties of which may be specified with exactness.

Swiss Devise New Clay Reclaiming Process

LONDON—The adoption of a new Swiss process for extracting oil from bleaching clay, by numerous European refiners indicates that this recent development may take a place in refining. The disadvantages of the older methods, such as expense, excessive steam consumption, and unpleasant gases, are well known to refiners. The new process claims to overcome or at least relieve these difficulties.

The treatment takes place in an open vessel with an agitator and is simple enough to require only slight attention of plant employes, according to claims, thus obviating the necessity for a special operator. Cheap chemical products are used, about 75 per cent of the steam formerly required is needed and about 1000 gallons of water per ton of clay. The power consumption on a one-ton batch of clay is about five or six h.p, for eight hours. Another advantage claimed, is the reactivation of the clay which may be used alone in some cases or mixed with fresh clay.

Association to Gather Gasoline Statistics

TULSA, Jan. 25.—Natural gasoline production and stocks statistics in the Mid-Continent will be gathered monthly by the Natural Gasoline Association of America, beginning with January, Ray E. Miller, secretary, has announced.

The association decided to gather these figures because the only other natural gasoline statistics, those collected by the Bureau of Mines, are usually six weeks late. The association expects to place its report in the hands of member companies not later than the 15th of the following month.

Oil Trade With Japan Helped

WASHINGTON, Jan. 13.—Depreciation of dollar exchange has substantially improved the position of American lubricating oils on the Japanese market, according to a report made public by the Department of Commerce. For some time American refined oils were at a severe price disadvantage in competition with Japanese oil companies refining imported crudes. The report cites a tendency to use high-grade lubricants, a development regarded as favorable to American products. Consumption of lubricating oils in Japan approximates 10,000,000 gallons annually, the report said.

More Companies to Cancel L. & A. in Indiana

CHICAGO, Jan. 25.—Officials of a number of major marketing companies having lease and agency contracts in Indiana stated they were cancelling those contracts which might prove unprofitable if compelled to pay the maximum chain store tax of $150 a year. The courts have ruled that lease and agency stations are to be considered the same as company owned stations. The tax on individually owned stations is $3 a year.

Standard of Indiana recently announced it was discontinuing many of its lease and agency stations in Indiana which were proving unprofitable under the new chain store tax law.

No definite information is available as to the number of leases that will be cancelled.

Beall Joins Wright Staff

NEW YORK, Jan. 25.—A. L. Beall, automotive and fuel engineer, has joined the staff of Wright Aeronautical Corp., Paterson, N. J., as test engineer.

Mr. Beall is well known in refining and automotive circles, having been with the Vacuum Oil Co. for six years as engineer in charge of fuel quality for the export division of that company. He has been incapacitated because of a severe illness, but is completely recovered. He is active in the Society of Automotive Engineers.

Proposed Standard Contract Forms

This contract form is published for information and study only. It is now in process of revision and is not to be used for the transaction of any business.

M-1

IMPORTANT NOTICE

Pursuant to an order promulgated by the Honorable Harold L. Ickes, Administrator for the Petroleum Industry and Secretary of the Interior, on the 19th day of January, 1934, any person who violates any provision of the Marketing Agreement or of a contract entered into pursuant thereto shall be guilty of a violation of Title I of the National Industrial Recovery Act, and shall be punishable by a fine of not to exceed $500.00 or imprisonment for not to exceed six months, or both.

OFFICIAL

DISTRIBUTOR'S MARGINAL CONTRACT

FOR GASOLINE AND OTHER MOTOR FUELS

CONTRACT OF SALE made....., 193....., between....., ... (Name of Company) (Address of Company) hereinafter called "Seller," and..... (Name of Distributor) ....., (Address of Distributor) hereinafter called "Purchaser."

FIRST: *Sale; Products; Price.* Seller hereby agrees to sell and deliver and Purchaser agrees to buy, receive and pay for the entire quantity (subject to maxima and minima below stated) of motor fuel, in full tank car, truck train or barge lots, required by Purchaser in Purchaser's business of distributing petroleum products. In the performance of their respective obligations hereunder, Seller will deliver and Purchaser will receive and pay for the following grades and/ or brands of the kind and quality marketed by Seller at time and place of delivery at the prices below stated:

MOTOR FUEL		QUANTITY PER YEAR	PRICES
Grades	Brands		
Above 70 Octane.....	.....	Minimum .....gallons Maximum .....gallons	Seller's authorized service station price per gallon in effect at destination at time of shipment less Seller's posted discount to distributors.
60 to 70 Octane.....	.....	Minimum .....gallons Maximum .....gallons	
Below 60 Octane.....	.....	Minimum .....gallons Maximum .....gallons	
Octane rating shall be determined by prevailing A. S. T. M. Method.			
The term "motor fuel" for the purposes of this contract shall include, without limitation, gasolines and/or other motor fuels, but shall not include kerosenes, furnace oils, distillates, tractor and diesel fuel oils.			

The words "Seller's authorized service station price" mean the service station price per gallon for the grade sold and delivered hereunder fixed by Seller from time to time and furnished to Purchaser as hereinafter provided for the destination hereinafter mentioned.

The words "Seller's posted discount to distributors" mean Seller's prevailing discount per gallon to distributors for the grade sold and delivered hereunder as posted at Seller's office at....., at time of shipment, in respect to destination. Seller's authorized service station prices shall be subject to inspection by any interested parties at Seller's said office.

In no event shall said discounts (a) on motor fuels of 60 Octane and above be less than 6 cents per gallon or one and one-half times Seller's authorized discount on said motor fuels to undivided dealers buying from Purchaser, whichever is the greater, and (b) on motor fuels of below 60 Octane, be more than 4½ cents per gallon or one and one-half times Seller's authorized discount on said motor fuels to undivided dealers buying from Purchaser, whichever is less.

The discounts to distributors and to dealers above referred to shall at all times be those established in accordance with the provisions of an agreement, dated December 7, 1933, relating to uniform contracts and other matters and approved by the Planning and Co-ordination Committee for the Petroleum Industry and the Petroleum Administrator.

In event taxes on any grade of motor fuel sold hereunder or on its sale or use payable under the law by Pur-

chaser are included in Seller's authorized service station price therefor, such taxes shall be deducted therefrom and price to Purchaser hereunder in such case shall be the result of said deduction less the applicable discount hereinabove set forth.

SECOND: *Resale Prices.* Seller from time to time shall classify the resellers who purchase motor fuel from the Purchaser. Seller's classification and the determination of the discounts and allowances, if any, which may be granted by Purchaser to any class of reseller shall be conclusive.

In regard to each grade of motor fuel, Seller shall currently notify Purchaser what are Seller's authorized (a) service station prices, and (b) allowances or discounts to each class of reseller; and shall advise Purchaser the proper method of determining prices to all classes of resellers purchasing motor fuel from Purchaser. Purchaser, in the manner required by the Petroleum Code, shall post, as Purchaser's prices and discounts, the prices and discounts thus supplied by Seller.

Purchaser shall resell motor fuel at service stations and to resellers at Seller's authorized price as set forth in Seller's notice in effect at time and place of resale by Purchaser applicable to the grade of product, type of resale and method of delivery involved in the resale transaction.

Purchaser shall require any reseller buying from Purchaser to resell the motor fuel, sold by Purchaser to such reseller, at Seller's authorized price in effect at time and place of resale by said reseller applicable to the grade of product, type of resale and method of delivery involved in such resale transaction, and shall incorporate a provision to that effect in each contract of sale with each such reseller.

The intent of this clause is that Purchaser shall strictly maintain and shall cause resellers buying from Purchaser to maintain the prices of Seller's motor fuel designated from time to time by Seller for the territory in which Purchaser does business.

THIRD: *Delivery.* F. O. B. tank cars, truck trains, barges or other means of transportation selected by Seller properly consigned to Purchaser's destination with freight allowed to destination.

FOURTH: *Place of Delivery.* Seller's refinery or terminal at .....

FIFTH: *Destination.* Purchaser's bulk plant or plants at .....

(The following provision designated Sixth, or any part thereof, may be used or not used at the option of the parties to the contract)

SIXTH: *Territory.* Purchaser's distribution of products purchased hereunder shall not, without Seller's written consent, extend beyond the limits of the following territory:

This provision { shall not be deemed / shall be deemed } to give Purchaser exclusive territorial rights.

SEVENTH: *Terms of Payment*.....

Note: Credit terms shall not exceed those permitted by the Petroleum Code.

Discounts for cash, if any, shall not be allowed from or applied to or computed upon taxes or freight.

EIGHTH: *Place of Payment.* Seller's office at.....

NINTH: *Duration of Contract.* One year beginning....., 19....., and thereafter until terminated by either party by thirty days prior written notice; provided, however, that either party at its option, in addition to all other available remedies, may terminate this agreement forthwith upon the other's failure to perform any of the obligations imposed upon the other hereby.

TENTH: *Uniform Contract.* This form of contract is the official form of Distributor's Marginal Contract, prepared by the Planning and Co-ordination Committee for the Petroleum Industry, and approved by the Petroleum Administrator.

ELEVENTH: *Approval.* This agreement or any modification thereof shall not be binding upon Seller until approved and signed on its behalf by .....
Commencement of performance hereunder prior to approval and signing as above stipulated in no case shall be construed as a waiver by Seller of this requirement.

(The use of the foregoing clause shall be optional with Seller)

TWELFTH: *Other Provisions.* The provisions of contract printed on page 4 hereof, except those that by their terms are inapplicable, are parts of this contract.

THIRTEENTH: The President, or any agency appointed by him, may from time to time cancel or modify any provision contained in this contract in order to effectuate the policy of the National Industrial Recovery Act.

Witness: ....
(Purchaser)

By .....

Witness: .....

.....
(Seller)

Negotiated by: .....

By .....

This contract form is published for information and study only. It is now in process of revision and is not to be used for the transaction of any business.

M-1a

IMPORTANT NOTICE

Pursuant to an order promulgated by the Honorable Harold L. Ickes, Administrator for the Petroleum Industry and Secretary of the Interior, on the 19th day of January, 1934, any person who violates any provision of the Marketing Agreement or of a contract entered into pursuant thereto shall be guilty of a violation of Title I of the National Industrial Recovery Act, and shall be punishable by a fine of not to exceed $500.00 or imprisonment for not to exceed six months, or both.

Official Rider for Distributor's Marginal Contract for motor fuel below 60 Octane.

Rider attached to and forming part of contract between .....

(Seller) and.....(Purchaser), dated .....

Purchaser hereby elects to buy, receive and pay for and Seller agrees to sell any motor fuel of less than 60 Octane that may be covered by this contract at Seller's spot tank car price (in lieu of the price stipulated in Clause First of said contract) for such product in effect at time of shipment as posted at Seller's plant designated in Clause Fourth of said contract.

Said price shall be f.o.b. Seller's refinery or terminal, designated in Clause Fourth of said contract.

Purchaser shall pay all freight and other transportation charges.

Anything to the contrary notwithstanding:

(a) Seller may make any delivery of said motor fuel of less than 60 Octane from any refinery or terminal other than that above provided for and shall increase its invoice price for such motor fuel so delivered, to an amount equivalent to what the cost to Purchaser at destination would have been, had the delivery thereof been made from the refinery or terminal specified in Clause Fourth.

(b) In lieu of making delivery of such motor fuel of less than 60 Octane by rail, Seller may deliver any of or all such motor fuel to Purchaser at point of destination by any other means of transportation whatsoever and shall increase its invoice price to purchaser to an amount equivalent to what the cost to Purchaser at destination would have been had the delivery thereof been made by rail.

(c) The President, or any agency appointed by him, may from time to time cancel or modify any provision contained in this contract in order to effectuate the policy of the National Industrial Recovery Act.

Any and all provisions set forth in the above mentioned contract, hereto attached, pertaining to gross marketing margin or differential between Seller's authorized service station price in Purchaser's territory and the spot price herein mentioned, shall be ineffective and void insofar as motor fuel below 60 Octane is concerned.

Signed and delivered the day of the date of the aforesaid contract.

.....
(Seller)

Witness: ..... By .....

.....
(Purchaser)

Witness: ..... By .....

PROVISIONS OF CONTRACT

Petroleum Code.—The parties hereto shall at all times during the period of this agreement strictly comply with the letter and spirit of the Code of Fair Competition for the Petroleum Industry promulgated by the President of the United States on August 19th, 1933, and all official amendments, modifications and interpretations thereof.

N. I. R. A. and Activities Thereunder.—If any provision herein contained in Seller's opinion depends for its validity in whole or in part on the National Industrial Recovery Act or any agreement made pursuant thereto or the Petroleum Code, then, on the expiration of said act or the termination of said agreement or of the applicable Code provision or the invalidation of any thereof, in Seller's opinion, by a court of competent jurisdiction, such provision shall be thereafter ineffective without, however, in any manner nullifying any other provision of this contract.

Entirety of Contract.—No prior stipulation, agreement or understanding of the parties or their agents in respect to the subject matter of this agreement shall be valid or enforceable unless embodied in this contract or covered by these provisions.

This contract supersedes and cancels all agreements between the parties in respect of the purchase by Purchaser and sale by Seller of products covered hereby for delivery at the point(s) of delivery herein stated and without prejudice to accrued rights of either party under said superseded agreements.

Waivers.—The Seller's right to require strict performance by Purchaser of any and/or all obligations imposed upon Purchaser by this contract shall not in any way be affected by any previous waiver, forbearance or course of dealing.

Deliveries in Steel Barrels.—If serially numbered or returnable steel barrels of the Seller are employed they shall remain the property of the Seller, and shall be returned promptly on demand in as good condition as when received, less ordinary wear and tear, and nothing other than the original contents shall be placed therein.

Unloading of Cars and Vessels.—Purchaser shall provide adequate facilities for the prompt unloading of all tank cars, freight cars and vessels, and shall promptly receive and unload shipments, returning empty cars as instructed by

Seller. Purchaser shall pay demurrage, car rental, charter hire, and other damages for the time any cars or vessels are held beyond forty-eight (48) hours after arrival at destination.

Purchaser's Requirements.—Purchaser's requirements mean all the product consumed, sold and/or otherwise handled by Purchaser in his business or other operations during the period of this agreement. If the contract covers the requirements of the Purchaser, it will be limited to the time and places and to the kind or kinds of business or operation specified, and also to the normal requirements of the Purchaser at existing and specified plants or places of business, unless otherwise specified in the contract.

Deliveries Delayed or Prevented.—The Seller shall not be liable in damages or otherwise when deliveries are delayed or prevented by fire, storm, flood, war, rebellion, insurrection, riot, strike, differences with workmen, failure of carriers to transport or furnish facilities for transportation or for delay or failure in delivery when the supplies of the Seller, or the facilities of production, manufacture, transportation or distribution, which otherwise would be available to the Seller, are impaired by the order, requisition or necessity of any government or acting authority, or when such delay or failure is due to any cause whatsoever beyond the control of the Seller, whether similar to or dissimilar from the causes here enumerated.

Ethyl and Other Motor Fuel Anti-Knock Compounds.—In respect of any motor fuel which may contain either an "Ethyl" or any other anti-knock compound(s), this agreement is subject to (a) all the provisions contained in the agreements under which Seller is licensed to manufacture and sell motor fuel containing said compounds and (b) compliance by Purchaser with all such provisions, rules, regulations and orders now in existence or which may hereafter be issued by the licensor or any governmental authority having jurisdiction insofar as the same apply to motor fuel purchased by Purchaser from Seller. If Purchaser shall fail or refuse to comply therewith, Seller may either suspend deliveries of such motor fuel or terminate this agreement in respect to such motor fuel.

Motor Fuel Below 60 Octane.—If this contract covers a motor fuel below 60 Octane, Seller shall not be obligated to deliver the same until (a) Seller has an adequate supply thereof at its plant from which deliveries shall be made to Purchaser and/or (b) adequate facilities for the receipt and handling thereof have been installed by Purchaser.

Change of Brand Name.—Seller, in its uncontrolled discretion, may at any time change the brand name or any distinctive designation of any of its products. Should it do so, this contract shall be deemed to cover product(s) of the new name(s) and/or designation(s) to the same extent as if said name(s) or designation(s) were specifically set forth herein.

Discontinuance of Products.—Seller reserves the right to discontinue the sale in Purchaser's territory of any product named herein. Should Seller do so, Seller shall not thereafter be obligated to make deliveries hereunder of such product. If, however, Seller shall sell in the territory in which deliveries are made to Purchaser another brand in place of a discontinued one, such brand shall be substituted for the one discontinued. In either case, Seller shall thereafter be obligated to sell and deliver and Purchaser shall be obligated to buy, receive and pay for whatever quantity of other and/or substituted brands as shall be requisite in order that the aggregate quantity obligation set forth in Clause First hereof shall be performed.

Payments.—The Purchaser shall pay for goods without discount or deduction except as stated in the contract; and if at any time the financial responsibility of the Purchaser shall become impaired or unsatisfactory to the Seller or in the Seller's opinion inadequate to meet the obligations hereunder, cash payments or satisfactory security may be required. A failure to pay any amount when due may at the option of the Seller terminate the contract as to further deliveries, and no forbearance, course of dealing, or prior payment, shall affect this right of the Seller.

Claims.—Any claims for defect or variance in quality or shortage in quantity shall be made, and the Seller shall be notified and given an opportunity to inspect, within two days after the products or goods are delivered, except that if delivery is made in equipment furnished by the Seller such notice and opportunity shall be given before the products or goods are unloaded; and if delivery is made in equipment furnished by the Purchaser such notice and opportunity shall be given before the products or goods move from point of shipment. If equipment furnished by the Seller is in bad order or leaking the Purchaser shall notify the carrier and secure examination by the authorized agent of the carrier as to the condition of the shipment before the same is unloaded. Failure of the Purchaser to comply with these requirements shall operate as a waiver of any and all claims by the Purchaser.

Taxes.—Purchaser shall pay Seller amounts equivalent to any tax and/or duty (not included in the price or otherwise paid by Purchaser) now or hereafter imposed, directly or indirectly, by any domestic or foreign governmental authority or agency, and any increases in such tax or duty, on, in respect of, or measured by (a) this agreement, (b) the goods covered by this agreement or any material contained in such goods and/or (c) the manufacture, sale, use, and/or other handling of said goods or material; and the Seller, upon payment of or liability for such tax or duty, shall bill Purchaser for, and the Purchaser shall pay the amount thereof.

Monthly Shipments.—Shipments or deliveries shall be in equal monthly quantities unless otherwise stated in the contract, the Purchaser having the option of varying the monthly quantities by ten per cent, provided that, subject to other provisions of this contract, the agreed quantity must be taken within the time fixed.

Approximate Quantities.—In case deliveries are made in carload, boatload, or tankwagon lots, deliveries within ten per cent of amounts called for by the contracts or any installment thereof shall be deemed sufficient deliveries by the Seller, only the actual amounts delivered to be paid for.

Trade Marks and Names.—Purchaser shall not sell products purchased from others under the trade mark or trade name of Seller. Purchaser, however, with Seller's consent (which may be withdrawn at any time or from time to time), may use the trade marks or trade names of Seller to identify and advertise Seller's trade marked and/or branded products handled by Purchaser. Such use, if consent thereto be given by Seller, shall be strictly in accordance with conditions imposed and directions given as to the manner of such use to Purchaser by Seller from time to time.

Notices.—Any notice to be given hereunder shall be in writing and shall be deemed to have been duly given if and when deposited in the United States mail, properly stamped and addressed to the party for whom intended at the address of such party herein specified, or when delivered personally to such party at such address.

Assignability.—This contract is not assignable by the Purchaser except with the written consent of the Seller.

This contract form is published for information and study only. It is now in process of revision and is not to be used for the transaction of any business.

M-2

IMPORTANT NOTICE

Pursuant to an order promulgated by the Honorable Harold L. Ickes, Administrator for the Petroleum Industry and Secretary of the Interior, on the 19th day of January, 1934, any person who violates any provision of the Marketing Agreement or of a contract entered into pursuant thereto shall be guilty of a violation of Title I of the National Industrial Recovery Act, and shall be punishable by a fine of not to exceed $500.00 or imprisonment for not to exceed six months, or both.

OFFICIAL
DEALER CONTRACT
FOR GASOLINE AND OTHER MOTOR FUELS

CONTRACT OF SALE made ....., 19...., between .....hereinafter called "Seller,"
(Name of company and its local address)
and .....on date hereof
(Name of dealer and business address)
{A Divided / An Undivided} Dealer hereinafter called "Purchaser."

FIRST: *Sale; Products; Price.* Seller hereby agrees to sell and deliver and Purchaser agrees to buy, receive and pay for the below stated quantity of motor fuel. In the performance of their respective obligations hereunder, Seller will deliver and Purchaser will receive and pay for the following grades and/or brands of the kind and quality marketed by Seller at time and place of delivery, at the prices below stated:

MOTOR FUEL		QUANTITY PER YEAR	PRICES PER GALLON
Grades	Brands		
Above 70 Octane.....	.....	Not less than.....gallons	Seller's service station price (without deduction or discount) for the grade delivered in effect at time and for place of delivery as posted at Seller's bulk plant from which deliveries are made less only Seller's prevailing discount in effect to dealers of purchaser's class at the time and for place of delivery as posted at said bulk plant.
60 to 70 Octane.....	.....	nor more than.....gallons	
Below 60 Octane.....	.....	in aggregate for all grades.	
Octane rating shall be determined by prevailing A. S. T. M. Method.			
The term "motor fuel" for the purposes of this contract shall include, without limitation, gasolines and/or other motor fuels, but shall not include kerosenes, furnace oils, distillates, tractor and diesel fuel oils.			

SECOND: *Resale Prices.* The Purchaser shall resell each grade of motor fuel at Seller's posted service station price per gallon (without any discount or deduction therefrom) prevailing at the time and for the place of such resale as posted at Seller's bulk plant from which deliveries are made to Purchaser hereunder. Such resales shall be made only from the points of delivery specified herein.

THIRD: *Delivery and Point(s) of Delivery.* By tank wagon or truck at .....
.....
(Here insert location of dealer's station(s).

FOURTH: *Terms of Payment*.....

Note: Credit terms shall not exceed those permitted by the Code of Fair Competition for the Petroleum Industry.

FIFTH: *Duration of Contract.* One year, beginning....., 19...., and from year to year thereafter; provided, however, that either party may at any time terminate this agreement at the end of any calendar month by at least thirty days' prior written notice to the other.

Either party, at its option, in addition to all other available remedies, may terminate this agreement forthwith upon the other's failure to perform any of the obligations imposed upon the other by this contract.

SIXTH: *Classification of Dealers.* The classes of dealers to which this contract is applicable are as follows:

DIVIDED DEALER: One selling motor fuel of more than one supplier from the same or adjoining locations.

UNDIVIDED DEALER: One selling motor fuel of only the Seller from the same or adjoining locations.

If and when Purchaser is a Divided Dealer, Purchaser may become an Undivided Dealer at any time Purchaser so elects; if and when Purchaser is an Undivided Dealer, Purchaser may become a Divided Dealer upon the expiration of thirty days after notice to Seller to that effect; provided, in either case, Purchaser does not thereby violate any provision of a then existing agreement for the purchase of motor fuel.

SEVENTH: *Approval.* This agreement or any modification thereof shall not be binding upon Seller until approved and signed on its behalf by .....
Commencement of performance hereunder prior to approval and signing as above stipulated in no case shall be construed as a waiver by Seller of this requirement.

(The use of the foregoing clause shall be optional with Seller.)

EIGHTH: *Other Provisions.* The provisions of contract printed on the reverse side hereof, except those that by their terms are inapplicable, are parts of this contract.

Witness: ....
(Seller)

By .....

Witness: .....

.....
(Purchaser)

Negotiated by: ..... By .....

PROVISIONS OF CONTRACT

(Provisions of this contract are largely similar to those in the Distributor's Marginal Contract. The following provisions in the Distributor's Marginal Contract are not applied to the Dealer's contract: Unloading of Cars and Vessels; Purchaser's Requirements; Claims; and Monthly Shipments. The following are new or substitute provisions not in the Distributor's contract. Editor)

Payments.—The Purchaser shall pay for goods, without discount or deduction, except as stated in the contract; and if at any time the financial responsibility of the Purchaser shall become impaired or unsatisfactory to the Seller or in the Seller's opinion inadequate to meet the obligations hereunder, cash payments or satisfactory security may be required. On a failure of Purchaser to pay any amount when due Seller may terminate the contract as to further deliveries, and no forbearance, course of dealing, or prior payment, shall affect this right of the Seller.

Monthly Quantities.—Deliveries hereunder shall be in approximately equal monthly quantities, provided that, subject to other provisions of this contract, the agreed quantity shall be taken within the time fixed.

The President, or any agency appointed by him, may from time to time cancel or modify any provision contained in this contract in order to effectuate the policy of the National Industrial Recovery Act.

[This contract form is published for information and study only. It is now in process of revision and is not to be used for the transaction of any business.]

M-3

IMPORTANT NOTICE

Pursuant to an order promulgated by the Honorable Harold L. Ickes, Administrator for the Petroleum Industry and Secretary of the Interior, on the 19th day of January, 1934, any person who violates any provision of the Marketing Agreement or of a contract entered into pursuant thereto shall be guilty of a violation of Title I of the National Industrial Recovery Act, and shall be punishable by a fine of not to exceed $500.00 or imprisonment for not to exceed six months, or both.

OFFICIAL

RESELLERS TANK SHIP CONTRACT

(SPOT PRICE BASIS)

FOR GASOLINE AND OTHER MOTOR FUELS

CONTRACT OF SALE made....., 193....., between ....., ...
(Name of Company) (Address of Company)

hereinafter called "Seller," and.....
(Name of Distributor)

....., hereinafter called "Purchaser."
(Address of Distributor)

FIRST: *Sale; Products; Price.* Seller hereby agrees to sell and deliver and Purchaser agrees to buy, receive and pay for .....
(Here insert quantity)

of motor fuel, in full tank ship lots. In the performance of their respective obligations hereunder, Seller will deliver and Purchaser will receive and pay for the following grades and/or brands of the kind and quality marketed by Seller at time and place of delivery at the prices below stated:

MOTOR FUEL		QUANTITY PER YEAR	PRICES
Grades	Brands		
Above 70 Octane.....	.....	Minimum .....gallons Maximum .....gallons	Seller's tank ship cargo spot price in effect at time of shipment for the grade delivered, as posted at Seller's plant designated in Clause Fourth hereof.
60 to 70 Octane.....	.....	Minimum .....gallons Maximum .....gallons	
Below 60 Octane..... Octane rating shall be determined by prevailing A. S. T. M. Method.	.....	Minimum .....gallons Maximum .....gallons	

The term "motor fuel" for the purposes of this contract shall include, without limitation, gasoline and/or other motor fuels, but shall not include kerosenes, furnace oils, distillates, tractor and diesel fuel oils.

Purchaser shall pay all freight, wharfage, transportation, lighterage, if any, insurance, and other charges.

Anything to the contrary herein notwithstanding:

(a) Seller may make any delivery hereunder from any refinery or terminal other than that hereinafter designated and shall increase its invoice price for the product so delivered, to an amount equivalent to what the cost to Purchaser at destination would have been had the delivery thereof been made from the refinery or terminal specified in Clause Fourth.

(b) Seller may deliver any of or all the products covered by this contract to Purchaser at point of destination by any other means of transportation whatsoever than as herein designated and shall increase its invoice price to Purchaser to an amount equivalent to what the cost to Purchaser at destination would have been had the delivery thereof been made as designated herein.

Seller by this agreement does not guarantee to the Purchaser any minimum gross marketing margin or differential between Seller's authorized service station prices in Purchaser's territory and the spot price hereinabove referred to. Purchaser, at time of execution of this contract, was offered an agreement guaranteeing Purchaser's margin, and Purchaser elected to purchase products from Seller on a spot price basis as herein provided.

If any prevailing guaranteed margin to distributors be greater than Purchaser's gross marketing margin, Seller shall not terminate this contract or substitute therefor a guaranteed margin contract, nor shall Seller in such case terminate or modify this agreement by allowing to Purchaser any trade discount.

SECOND: *Resale Prices.* Seller from time to time shall classify the resellers who purchase motor fuel from the Purchaser. Seller's classification and the determination of the discounts and allowances, if any, which may be granted by Purchaser to any class of reseller shall be conclusive.

In regard to each grade of motor fuel, Seller shall currently notify Purchaser what are Seller's authorized (a) service station prices and (b) allowances or discounts to each class of reseller; and shall advise Purchaser the proper method of determining prices to all classes of resellers purchasing motor fuel from Purchaser. Purchaser, in the manner required by the Petroleum Code, shall post, as Purchaser's prices and discounts, the prices and discounts thus supplied by Seller.

Purchaser shall resell motor fuel at service stations and to resellers at Seller's authorized price as set forth in Seller's notice in effect at time and place of resale by Purchaser applicable to the grade of product, type of resale and method of delivery involved in the resale transaction.

Purchaser shall require any reseller buying from Purchaser to resell the motor fuel, sold by Purchaser to such reseller, at Seller's authorized price in effect at time and place of resale by said reseller applicable to the grade of product, type of resale and method of delivery involved in such resale transaction, and shall incorporate a provision to that effect in each contract of sale with each such reseller.

The intent of this clause is that Purchaser shall strictly maintain and shall cause resellers buying from Purchaser to maintain the prices of Seller's motor fuel designated from time to time by Seller for the territory in which Purchaser does business.

THIRD: *Delivery.* F. O. B. tank ship properly consigned to Purchaser's destination.

FOURTH: *Place of Delivery.* Seller's refinery or terminal at .....

FIFTH: *Shipment.* Shipments shall be made at the times and in the quantities designated below:

SIXTH: *Destination.* Purchaser's bulk plant or plants at .....

(The following provision designated Sixth, or any part thereof, may be used or not used at the option of the parties to the contract)

SEVENTH: *Territory.* Purchaser's distribution of products purchased hereunder shall not, without Seller's written consent, extend beyond the limits of the following territory:

This provision { shall not be deemed / shall be deemed } to give Purchaser exclusive territorial rights.

EIGHTH: *Terms of Payment*.....

Note: Credit terms shall not exceed those permitted by the Code of Fair Competition for the Petroleum Industry.

Discounts for cash, if any, shall not be allowed from or applied to or computed upon taxes or freight.

NINTH: *Place of Payment.* Seller's office at.....

TENTH: *Duration of Contract.* One year beginning....., 19....., and thereafter until terminated by either party by thirty days prior written notice; provided, however, that either party at its option, in addition to all other available remedies, may terminate this agreement forthwith upon the other's failure to perform any of the obligations imposed upon the other hereby.

ELEVENTH: *Vessel Berth: Demurrage.* If Purchaser furnishes any vessel, Purchaser shall give Seller reasonable notice of the time of arrival of said vessel for loading and Seller shall furnish, without cost to Purchaser, berth at which such vessel may lie safely afloat at all stages, together with the necessary connections and facilities for loading, and shall load the product promptly. When a vessel is delayed in consequence of failure by the Seller to comply with these provisions, the Seller shall pay demurrage at the prevailing rate according to the size of the vessel used. In no event shall Seller be obliged to furnish berth for a vessel having an overall length in excess of .....feet or draft in excess of.....feet.

If the Seller furnishes the vessel for transportation of the product from point of delivery to point of destination, the Purchaser, immediately upon the arrival of any vessel shall furnish without cost berth at which the vessel

may lie safely afloat at all stages, together with the necessary connections and facilities for receiving and shall receive the product as fast as it can be discharged. In ports where fire is not allowed on board vessels the Purchaser shall find and furnish steam for discharging purposes. The maximum free unloading time for tank ships is 48 running hours, Sundays and holidays excepted, unless used. When a vessel is delayed in consequence of failure by the Purchaser to comply with these provisions, or through any fault or negligence of the Purchaser, the Purchaser shall pay demurrage at the prevailing rate according to the size of the vessel used.

TWELFTH: *Quantity and Quality Tests.* The products shall be inspected for quality and gauged for quantity at time and place of delivery by representatives of the parties jointly as follows:

(a) Samples shall be taken from Seller's shore tanks and tested for quality. Prevailing A.S.T.M. methods of tests shall be used.

(b) Quantity shall be determined by gauging shore tanks of Seller before, during and after loading. Quantity shall be computed on the basis of a barrel of 42 U. S. gallons of 231 cubic inches each, adjusted to 60° F. in accordance with correction tables of the United States Bureau of Standards.

In the event that a representative of either party is not present at the time of testing and gauging, the findings of the representative of the other party shall be binding and conclusive.

THIRTEENTH: *Uniform Contract.* This form of contract is the official of Resellers Tank Ship Contract, approved by the Planning and Coordination Committee for the Petroleum Industry, and approved by the Petroleum Administrator.

FOURTEENTH: *Approval.* This agreement or any modification thereof shall not be binding upon Seller until approved and signed on its behalf by.....
Commencement of performance hereunder prior to approval and signing as above stipulated in no case shall be construed as a waiver by Seller of this requirement.

(The use of the foregoing clause shall be optional with Seller.)

FIFTEENTH: *Other Provisions.* The provisions of contract printed on page 4 hereof, except those that by their terms are inapplicable, are parts of this contract.

SIXTEENTH: The President, or any agency appointed by him, may from time to time cancel or modify any provision contained in this contract in order to effectuate the policy of the National Industrial Recovery Act.

Witness: ....
(Purchaser)

Witness: ..... By .....
.....
(Seller)

Negotiated by: ..... By .....

PROVISIONS OF CONTRACT

(Provisions of this contract are the same as those of the Distributor's Marginal Contract except that the paragraph dealing with Deliveries in Steel Barrels is omitted and the following new provision is inserted. Editor)

Payments.—The Purchaser shall pay for goods without discount or deduction except as stated in the contract; and if at any time the financial responsibility of the Purchaser shall become impaired or unsatisfactory to the Seller or in the Seller's opinion inadequate to meet the obligations hereunder, cash payments or satisfactory security may be required. On failure of Purchaser to pay any amount when due Seller may terminate the contract as to further deliveries, and no forbearance, course of dealing, or prior payment, shall affect this right of the Seller.

Claims.—Any claim for defect or variance in quality or shortage in quantity shall be made, and the Seller shall be notified and given an opportunity to inspect, within two days after the products or goods are delivered, except that if delivery is made in equipment or vessels furnished by the Seller such notice and opportunity shall be given before the products or goods are unloaded; and if delivery is made in equipment or vessels furnished by the Purchaser such notice and opportunity shall be given before the products or goods move from point of shipment. If equipment furnished by the Seller is in bad order or leaking the Purchaser shall notify the carrier and secure examination by the authorized agent of the carrier as to the condition of the shipment before the same is unloaded. Failure of the Purchaser to comply with these requirements shall operate as a waiver of any and all claims by the Purchaser.

Approximate Quantities.—Deliveries within ten per cent of amounts called for by the contracts or any installment thereof shall be deemed sufficient deliveries by the Seller, only the actual amounts delivered to be paid for.

This contract form is published for information and study only. It is now in process of revision and is not to be used for the transaction of any business.

M-4

IMPORTANT NOTICE

Pursuant to an order promulgated by the Honorable Harold L. Ickes, Administrator for the Petroleum Industry and Secretary of the Interior, on the 19th day of January, 1934, any person who violates any provision of the Marketing Agreement or of a contract entered into pursuant thereto shall be guilty of a violation of Title I of the National Industrial Recovery Act, and shall be punishable by a fine of not to exceed $500.00 or imprisonment for not to exceed six months, or both.

OFFICIAL

CONFIRMATION OF ACCEPTANCE AND ORDER

SPOT TANK CAR SALES

FOR GASOLINE AND OTHER MOTOR FUELS

Date.....

Name .....

Address .....

We hereby acknowledge receipt of your order for.....tank cars of.....motor fuel and we hereby confirm the acceptance of such order on the following terms and conditions, pursuant to which delivery will be made:

FIRST: *Price.* Our spot tank car price in effect at time of shipment for the above grade of motor fuel as posted at our plant at..... Such price shall be f.o.b. said plant. You shall pay all freight and other transportation charges.

We may make shipment from any plant other than that above specified and shall increase our invoice price for the product so delivered to an amount equivalent to what the cost to you at destination would have been had the delivery thereof been made from the plant above specified.

SECOND: *Delivery and Destination.* Delivery shall be f.o.b. tank cars at said plant, selected by us and properly consigned to you at your bulk plant at.....

Shipments shall be made at the times and in the quantities below designated:.....

THIRD: *Resale Prices.* From time to time we shall classify the resellers who purchase motor fuel from you. Our classification and our determination of the discounts and allowances, if any, which may be granted by you to any class of reseller shall be conclusive. In regard to each grade of motor fuel, we shall currently notify you what are our authorized (a) service station prices and (b) allowances or discounts to each class of reseller and we shall advise you the proper method of determining prices to all classes of resellers purchasing motor fuel from you. You shall post in the manner required by the Petroleum Code as your prices and discounts those supplied by us. You shall resell said motor fuel at service stations and to resellers at our authorized price as set forth in our notice in effect at time and place of resale by you applicable to the grade of product, type of resale and method of delivery involved in the resale transaction. You shall require any reseller buying from you to resell the motor fuel, sold by you to such reseller, at our authorized price in effect at time and place of resale by said reseller applicable to the grade of product, type of resale and method of delivery involved in such resale transaction, and shall incorporate a provision to that effect in each contract of sale with each such reseller.

The intent of this provision is that you shall strictly maintain and cause resellers buying from you to maintain the prices of our motor fuel designated from time to time by us for the territory in which you do business.

FOURTH: *Terms of Payment.* .....

Credit terms shall not exceed those permitted by the Code of Fair Competition for the Petroleum Industry.

Discounts for cash, if any, shall not be allowed from or be applied to or computed upon taxes or freight. Payment shall be made at our office, from which invoice is issued.

FIFTH: The terms and conditions printed on the reverse side are incorporated herein and made a part hereof. In said terms and conditions we are referred to as "Seller" and you are referred to as "Purchaser."

SIXTH: The President, or any agency appointed by him, may from time to time cancel or modify any provision contained in this contract in order to effectuate the policy of the National Industrial Recovery Act.

Very truly yours, ...

PROVISIONS OF CONTRACT

(Provisions of this contract are similar to those of the Distributor's Marginal Contract except that the following provisions are omitted: Unloading of Cars and Vessels; Deliveries in Steel Barrels; Waivers; Purchaser's Requirements; Motor Fuel below 60 Octane; Change of Brand Name; Discontinuance of Products; Assignability; Monthly Shipments; Approximate Quantities; and the second paragraph of Entirety of Contract. The following new provisions are inserted. Editor)

PETROLEUM CODE. The parties hereto shall at all times strictly comply with the letter and spirit of the Code of Fair Competition for the Petroleum Industry promulgated by the President of the United States on August 19th, 1933, and all official amendments, modifications and interpretations thereof.

N. I. R. A. AND ACTIVITIES THEREUNDER.—If any provision herein contained in Seller's opinion depends for its validity in whole or in part on the National Industrial Recovery Act or any agreement made pursuant thereto or the Petroleum Code, then, on the expiration of said Act or the termination of said agreement or of the applicable Code provision or the invalidation of any thereof, in Seller's opinion, by a court of competent jurisdiction, such provision shall be ineffective without, however, in any manner nullifying any other provision herein contained.

ENTIRETY OF CONTRACT.—No prior stipulation, agreement or understanding of the parties or their agents in respect to the subject matter shall be valid or enforceable unless embodied herein or covered by these provisions.

UNLOADING OF CARS.—Purchaser shall provide adequate facilities for the prompt unloading of all tank cars, and shall promptly receive and unload shipments, returning empty cars as instructed by Seller. Purchaser shall pay demurrage, car rental, and other damages for the time any cars are held beyond forty-eight (48) hours after arrival at destination.

ETHYL AND OTHER MOTOR FUEL ANTI-KNOCK COMPOUNDS.—In respect of any motor fuel which may contain either an "Ethyl" or any other antiknock compound (s), the sales covered hereby are subject to (a) all the provisions contained in the agreements under which Seller is licensed to manufacture and sell motor fuel containing said compounds and (b) compliance by Purchaser with all such provisions, rules, regulations and orders now in existence or which may hereafter be issued by the licensor or any governmental authority having jurisdiction insofar as the same apply to motor fuel purchased by Purchaser from Seller. If Purchaser shall fail or refuse to comply therewith, Seller may discontinue further deliveries of such motor fuel.

PAYMENTS.—The Purchaser shall pay for goods without discount or deduction except as stated herein; and if at any time the financial responsibility of the Purchaser shall become impaired or unsatisfactory to the Seller or in the Seller's opinion inadequate to meet the obligations hereunder, cash payments or satisfactory security may be required. On a failure of Purchaser to pay any amount when due Seller may discontinue further deliveries hereunder.

APPROXIMATE QUANTITIES.—Deliveries within ten per cent of amounts provided for herein or any installment thereof shall be deemed sufficient deliveries by the Seller, only the actual amounts delivered to be paid for.

[This contract form is published for information and study only. It is now in process of revision and is not to be used for the transaction of any business.]

M-6

IMPORTANT NOTICE

Pursuant to an order promulgated by the Honorable Harold L. Ickes, Administrator for the Petroleum Industry and Secretary of the Interior, on the 19th day of January, 1934, any person who violates any provision of the Marketing Agreement or of a contract entered into pursuant thereto shall be guilty of a violation of Title I of the National Industrial Recovery Act, and shall be punishable by a fine of not to exceed $500.00 or imprisonment for not to exceed six months, or both.

OFFICIAL

CONFIRMATION OF ACCEPTANCE AND ORDER

SPOT BARGE AND TANK SHIP SALES

FOR GASOLINE AND OTHER MOTOR FUELS

Date.....

Name.....

Address.....

We hereby acknowledge receipt of your order for..... .....Barge/Tank Ship.....motor fuel and we hereby confirm the acceptance of such order on the following terms and conditions, pursuant to which delivery will be made:

FIRST: *Price.* Our spot Barge/Tank Ship price in effect at time of shipment for the above grade of motor fuel as posted at our plant at.....Such price shall be f.o.b. said plant. You shall pay all freight, wharfage, lighterage, if any, insurance and other charges.

SECOND: *Delivery and Destination.* Delivery shall be f.o.b. Barge/Tank Ship at said plant, selected by us and properly consigned to you at your terminal at..... .....

Shipments shall be made at the times and in the quantities below designated: .....

THIRD: *Resale Prices.* From time to time we shall classify the resellers who purchase motor fuel from you. Our classification and our determination of the discounts and allowances, if any, which may be granted by you to any class of reseller shall be conclusive. In regard to each grade of motor fuel, we shall currently notify you what are our authorized (a) service station prices and (b) allowances or discounts to each class of reseller and we shall advise you the proper method of determining prices to all classes of resellers purchasing motor fuel from you. You shall post in the manner required by the Petroleum Code as your prices and discounts those supplied by us. You shall resell said motor fuel at service stations and to resellers at our authorized price as set forth in our notice in effect at time and place of resale by you applicable to the grade of product, type of resale and method of delivery involved in the resale transaction. You shall require any reseller buying from you to resell the motor fuel, sold by you to such reseller, at our authorized price in effect at time and place of resale by said reseller applicable to the grade of product, type of resale and method of delivery involved in such resale transaction, and shall incorporate a provision to that effect in each contract of sale with each such reseller.

The intent of this provision is that you shall strictly maintain and cause resellers buying from you to maintain the prices of our motor fuel designated from time to time by us for the territory in which you do business.

FOURTH: *Terms of Payment*.....

Credit terms shall not exceed those permitted by the Code of Fair Competition for the Petroleum Industry.

Discounts for cash, if any, shall not be allowed from or be applied to or computed upon taxes or freight. Payment shall be made at our office, from which invoice is issued.

FIFTH: The terms and conditions printed on the reverse side are incorporated herein and made a part hereof. In said terms and conditions we are referred to as "Seller" and you are referred to as "Purchaser."

SIXTH: The President, or any agency appointed by him, may from time to time cancel or modify any provision contained in this contract in order to effectuate the policy of the National Industrial Recovery Act.

Very truly yours, ...

PROVISIONS OF CONTRACT

(Provisions of this contract are similar to those of the Distributor's Marginal Contract except that the following provisions are omitted: Waivers; Deliveries in Steel Barrels; Unloading of Cars and Vessels; Purchaser's Requirements; Motor Fuel below 60 Octane; Change of Brand Name; Discontinuance of Products; Monthly Shipments; Assignability. The following new provisions are inserted. Editor)

PETROLEUM CODE.—The parties hereto shall at all times strictly comply with the letter and spirit of the Code of Fair Competition for the Petroleum Industry promulgated by the President of the United States on August 19th, 1933, and all official amendments, modifications and interpretations thereof.

ENTIRETY OF CONTRACT.—No prior stipulation, agreement or understanding of the parties or their agents in respect to the subject matter shall be valid or enforceable unless embodied herein or covered by these provisions.

Vessel Berth: Demurrage. If Purchaser furnishes any vessel, Purchaser shall give Seller reasonable notice of the time of arrival of said vessel for loading and Seller shall furnish, without cost to Purchaser, berth at which such vessel may lie safely afloat at all stages, together with the necessary connections and facilities for loading, and shall load the product promptly. When a vessel is delayed in consequence of failure by the Seller to comply with these provisions, the Seller shall pay demurrage at the prevailing rate according to the size of the vessel used. In no event shall Seller be obliged to furnish berth for a vessel having an overall length in excess of.....feet or draft in excess of..... feet.

If the Seller furnishes the vessel for transportation of the product from point of delivery to point of destination, the Purchaser, immediately upon the arrival of any vessel shall furnish without cost berth at which the vessel may lie safely afloat at all stages, together with the necessary connections and facilities for receiving and shall receive the product as fast as it can be discharged. In ports where fire is not allowed on board vessels the Purchaser shall find and furnish steam for discharging purposes. The maximum free unloading time for tank ships is 48 running hours, Sundays and holidays excepted, unless used. When a vessel is delayed in consequence of failure by the Purchaser to comply with these provisions, or through any fault or negligence of the Purchaser, the Purchaser shall pay demurrage at the prevailing rate according to the size of the vessel used.

Quantity and Quality Tests. The product shall be inspected for quality and gauged for quantity at time and place of delivery by representatives of the parties jointly as follows:

(a) Samples shall be taken from Seller's shore tanks and tested for quality. Prevailing A.S.T.M. methods of tests shall be used.

(b) Quantity shall be determined by gauging shore tanks of Seller before, during and after loading. Quantity shall be computed on the basis of a barrel of 42 U. S. gallons of 231 cubic inches each, adjusted to 60° F. in accordance with correction tables of the United States Bureau of Standards.

In the event that a representative of either party is not present at the time of testing and gauging, the findings of the representative of the other party shall be binding and conclusive.

ETHYL AND OTHER MOTOR FUEL ANTI-KNOCK COMPOUNDS.—In respect of any motor fuel which may contain either an "Ethyl" or any other anti-knock compound(s), the sales covered hereby are subject to (a) all the provisions contained in the agreements under which Seller is licensed to manufacture and sell motor fuel containing said compounds and (b) compliance by Purchaser with all such provisions, rules, regulations and orders now in existence or which may hereafter be issued by the licensor or any governmental authority having jurisdiction insofar as the same apply to motor fuel purchased by Purchaser from Seller. If Purchaser shall fail or refuse to comply therewith, Seller may discontinue further deliveries of such motor fuel.

PAYMENTS.—The Purchaser shall pay for goods without discount or deduction except as stated herein; and if at any time the financial responsibility of the Purchaser shall become impaired or unsatisfactory to the Seller or in the Seller's opinion inadequate to meet the obligations hereunder, cash payments or satisfactory security may be required. On a failure of Purchaser to pay any amount when due Seller may discontinue further deliveries hereunder.

APPROXIMATE QUANTITIES.—Deliveries within ten per cent of amounts provided for herein or any installment thereof shall be deemed sufficient deliveries by the Seller, only the actual amounts delivered to be paid for.

[This contract form is published for information and study only. It is now in process of revision and is not to be used for the transaction of any business.]

M-7

IMPORTANT NOTICE

Pursuant to an order promulgated by the Honorable Harold L. Ickes, Administrator for the Petroleum Industry and Secretary of the Interior, on the 19th day of January, 1934, any person who violates any provision of the Marketing Agreement or of a contract entered into pursuant thereto shall be guilty of a violation of Title I of the National Industrial Recovery Act, and shall be punishable by a fine of not to exceed $500.00 or imprisonment for not to exceed six months, or both.

OFFICIAL

COMMISSION AGENCY AGREEMENT

FOR GASOLINE AND/OR OTHER MOTOR FUELS WHEN AGENT OWNS BULK PLANT FACILITIES

AGREEMENT, dated ....., 19....., between .....
Name of Company
....., hereinafter called "COMPANY," and .....
Address of Company Name of Agent
of ....., hereinafter called "AGENT";
Address of Agent

WITNESSETH:

First: The Company hereby appoints the Agent, and the Agent hereby accepts the appointment, as Agent for the Company at.....

The Agent shall furnish surety bond acceptable to the Company in form and amount to protect and indemnify the Company fully against loss of any moneys, values, products, equipment or property entrusted to him or coming under his control or into his hands as such Agent.

Agent shall devote Agent's entire business time and best efforts to the performance of Agent's duties in accordance with this agreement, and shall not engage directly or indirectly in any occupation that might interfere with Agent's duties hereunder.

(The following provision designated "SECOND" or any part thereof may be used or not used at the option of the parties to the contract.)

SECOND: Agent's sales of products without Company's prior written consent shall not extend beyond the limits of the following territory:

This provision shall be deemed / shall not be deemed to give Agent exclusive territorial rights.

THIRD: The Agent's duties are hereby fixed by this Agreement, by the rules and practices of the Company and by instructions issued by the Company from time to time.

FOURTH: The Agent shall:

(1) Strictly observe and obey the Company's instructions and faithfully perform all duties connected with the agency.

(2) Promptly, correctly and in strict accordance with Company's instructions, account for all Company moneys, goods, products, equipment, or other property in Agent's possession, or coming into Agent's custody, and pay the Company for any shortages which may develop at any time.

(3) Sell the products of the Company for cash, and shall not extend credit to any customer without prior written consent, and not exchange or agree to exchange the Company's products for property or merchandise for private use or account.

(4) Personally pay the Company on demand (a) the sum due on any account opened by Agent without authority, (b) any portion of any credit account which has been sold in excess of the credit limit placed thereon by the Company, and (c) any other losses suffered by the Company as a result of Agent's violation of any provision of this agreement. The Company shall not be under any obligation to make any attempt to collect such accounts or to assign any part of such accounts to Agent until the Company shall have received full settlement thereof.

(5) Not sell the Company's products, directly or indirectly, at less than Company's authorized prices.

(6) Not use the Company's goods or funds in any way for private purposes and not cash out of the Company's funds personal checks for customers or other persons.

(7) Not retain the amount of compensation due Agent from or as a charge against funds or any other property of the Company for which Agent is accountable.

(8) Bear all expenses incident to the proper operation of the agency and the maintenance of facilities and equipment, including, without limitation, (a) cost of painting, lettering and general maintenance of the bulk station facilities, service station facilities, trucks, miscellaneous equipment, whether owned by Agent or Company; and (b)

cost of handling, installing and removing gasoline and lubricating oil pump and tank equipment, whether or not said equipment be owned by the Company, which installation and handling by the Agent, if the Company owns the equipment, shall in no manner affect the Company's title. Title to all facilities and material used in installing the Company's equipment shall pass to the Company upon completion of installation, the Agent's compensation therefor being taken into account when establishing rates of commission hereunder.

(9) Except where specific provision to the contrary is made herein, pay all expenses of every kind and supply in a manner satisfactory to the Company all facilities and equipment necessary to the performance of the Agent's obligations hereunder.

(10) At Agent's expense, furnish all assistants and employes Agent may require for the proper and diligent operation of said agency, and assume full direction and control over and responsibility for all such assistants and employes; and shall procure and keep in force a policy satisfactory to the Company in respect of workmen's compensation and/or employer's liability insurance covering all employes of the Agent and shall furnish the Company with a certificate of such insurance, it being understood that the foregoing provision shall not have the effect of making any employes of the Agent employes of the Company.

(11) Indemnify and save the Company harmless from loss arising out of or by virtue of all damage to property and/or injury to person(s) (whether or not such injury result in death) occasioned by the acts of the Agent, Agent's assistants and/or employes.

(12) Strictly abide by the provisions of the Code of Fair Competition for the Petroleum Industry promulgated by the President of the United States pursuant to the provisions of the National Industrial Recovery Act.

(13) Not permit any assistant or employe or other person who is not of mature age and judgment to fill any container with, handle, ship or deliver any refined oil or gasoline at or from Agent's plant, store rooms or vehicles.

(14) Not assign this agreement without the prior written consent of the Company.

(15) Pay any indebtedness accruing to the Company at .....; and make remittances in the following manner:

(16) Not incur any obligations of any kind whatsoever in the name of the Company without the Company's prior written consent.

(17) Be liable to the Company for any demurrage or storage charges on account of Agent's failure to unload promptly tank cars or other railroad cars, or to take out promptly merchandise shipments consigned to Agent.

(18) Reimburse the Company for all taxes paid by it or for which it may be liable on or in connection with facilities and equipment used by Agent hereunder and on sales made and business done by or through Agent hereunder.

FIFTH: The Company shall:

(1) Have the right at its option to withhold any commissions, money or anything of value in its possession belonging to or due Agent, for the purpose of reimbursing itself for any amounts due hereunder from Agent at any time.

(2) Have the right to reject, with or without cause, any orders, proposed contracts, or orders made pursuant to contracts.

(3) In the event of the termination of the agreement, have the right, for a period of not to exceed three (3) months following the date of such termination, to use, as it sees fit, all Agent's storage facilities for petroleum products located at Agent's bulk plant premises at..... and to replenish its stock of merchandise in such facilities, and sell and deliver its products from the said premises, and remove all its products and other properties therefrom during the said period, and shall pay a rental at the rate of $.....per month for the period said facilities are so used.

(4) Pay freight on products shipped.

(5) And does not warrant the condition or fitness for purpose of any equipment furnished to the Agent.

(6) Subject to the other provisions hereof, pay the Agent the following commissions based on less than carload sales and transfers:

Anything to the contrary hereinabove notwithstanding, the commissions payable hereunder, when expressed in cents per gallon on average monthly sales and added to the undivided dealer margin, applicable in Agent's territory, shall not exceed the prevailing gross marketing margin determined for guaranteed marginal distributors, jobbers or wholesalers pursuant to the provisions of that certain agreement dated December 7, 1933 in regard to distributor and dealer margins and approved by the Petroleum Administrator on January 19th, 1934.

The commissions above provided include all rental or other compensation for the use by the Company of real and personal property owned by the Agent and used hereunder.

These commissions shall be subject to deductions herein mentioned and/or counter-claims by the Company, and, after deductions therefor have been made, the resulting sums shall be in full payment for all services rendered by the Agent hereunder.

All commissions payable hereunder shall be paid to the agent as follows: .....

SIXTH: (1) No commission shall be paid on carload transactions unless specifically agreed to in writing prior to the date such sales or transfers are made.

(2) The Agent shall not be entitled to (a) commissions on any accounts or bills receivable past due over 4 months or turned over to an agency or attorney for attention and/or collection, or (b) commission on products returned to stock or products purchased from competitors for resale.

All commissions will be computed on current sales and transfers. From each current commission statement the Company will deduct commissions which have previously been allowed on those accounts or bills receivable past due over 4 months or turned over to an agency or attorney for attention and/or collection.

SEVENTH: (1) This agreement shall continue in full force and effect until terminated by either party.

(2) Any and all agreements heretofore existing in reference to Agent's employment or compensation are hereby superseded and cancelled, without prejudice, however, to rights already accrued. Modification of this agreement shall not be binding unless signed by the parties hereto.

EIGHTH. This agreement, or any modification thereof shall not be binding upon Company until approved and signed on its behalf by a duly authorized Executive Officer, ..., ... , or ..... Commencement of performance hereunder prior to approval and signing as above stipulated, in no case shall be construed as a waiver by Company of this requirement.

NINTH: The President, or any agency appointed by him, may from time to time cancel or modify any provision contained in this contract in order to effectuate the policy of the National Industrial Recovery Act.

IN WITNESS WHEREOF, the parties have duly executed this agreement the day and year first above written.

Witness: .....

..... (Company)

By .....

Witness: .....

..... (Agent)

By .....

Crude Oil Used To Operate Old Gas Engine on Lease

IN THE old Petrolia field in Clay county, Texas, one lease has been pumped for more than 20 years. When oil was flush sufficient casinghead gas was available with which to operate the central pumping power gas engine. But after the wells had been pumped for many years, the gas production became so depleted it was impossible to operate the 20 horsepower four-cycle gas engine.

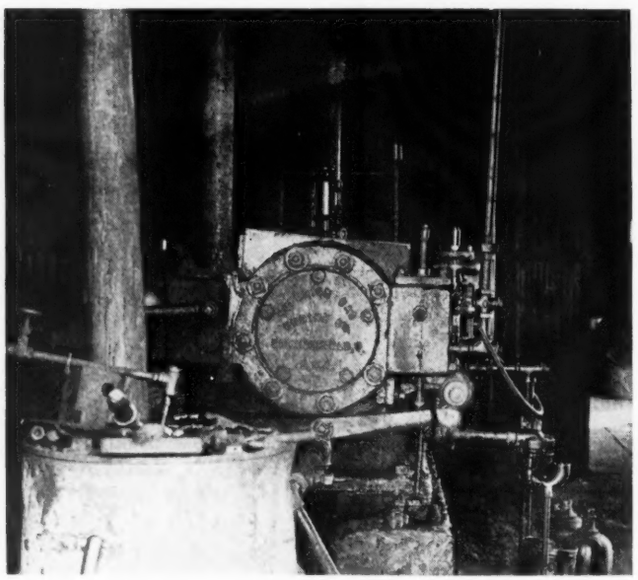
Many economies were essential, and installation of a diesel or other oil-burning engine to replace the gas engine was out of the question.

Gasoline was tried as a fuel for the old engine, but the expense was more than the traffic would bear. Finally crude oil was tried. The engine was equipped with a 2-inch Holly carburetor, attached to the gas connection of the intake manifold.

A supply tank was installed, placed high enough that gravity feed could be obtained, and the engine was started on gasoline. After it attained its proper pumping speed and temperature, the change was made to crude oil. To the surprise of F. H. Gohlke, the operator of the well, the engine continued to run and pull the power.

A year has passed, and the little old gas engine continues to run on crude oil, bucking a little at times, and rather hard to start in cold weather, but doing the work.

The oil has a gravity of around 41 degrees A. P. I., and that used for the converted gas engine is settled out free from moisture.



Twenty-year-old, 20 horsepower gas engine which has been refitted with a Holly carburetor to operate on crude oil. This engine supplies power for operating pumping equipment in the old Petrolia, Texas, field

Bill Aimed at Pipelines

WASHINGTON, Jan. 25.—A bill reported to be aimed at pipelines, providing for the states taxing business moving in interstate commerce was introduced by Congressman Swank, of Oklahoma, H. R. 6164. It would give the states the authority to tax, by either value or volume, the gasoline or crude, or natural gas, moving across the state in interstate business. The rate of taxation is not to be greater than that upon business done wholly within the state.

Lubrication Requirements of 1934 Cars

Many New Lubrication Points are Found on New Models, Some of Which May Easily be Overlooked

By William F. Lowe
N. P. N. Staff Writer

KNEE action front ends and a shift to lighter oils are the principal changes in the lubrication of 1934 cars. Needle bearing universal joints are more popular than last year and a little more rubber is being used in spring bolts and shackles. Free wheeling has been dropped entirely on some models while others make this feature optional with the purchaser. Only a few makes have retained it as standard equipment.

Independent front wheel suspensions on 1934 cars eliminate some lubrication points long familiar to service men and bring a considerable number of new points, some of which may readily be overlooked unless care is taken. Centralized chassis lubrication systems are offered on fewer models in 1934, another change which will increase service requirements.

Another point which will tend to increase rather than diminish the sale of oil, is the growing trend toward the use of lighter engine oils.

Though these oils unquestionably will give better lubrication even in summer temperatures they will not have the lasting qualities of heavier oils under the same conditions, and the motorist will have to learn to buy a lubricant just as he buys fuel to make his car go. Car owners may balk at the added expense at first, but when the added power is noted and the reduction in upkeep is appreciated there will be no further trouble in selling the idea.

The needle type universal joint is new on a number of late cars and though they require a graphite grease every 20,000 miles or so, they have to be dissembled for the application. There are few service stations where this job can be properly done since the services of an expert mechanic are needed. As far as the average station is concerned these points need no attention.

The trend in shackle design as evidenced in the 1934 cars is shown most clearly by comparison with those of last year. The following table is self explanatory.

Shackle types	1934 cars	1933 cars
Screw	28	8
Screw and Rubber	3	none
Metal and Rubber	2	2
All-rubber	10	9
Metal	14	37
Ball bearing	4	8

On the models made this year the use of rubber has increased very little and the use of screw shackles has risen from 11 per cent to 43 per cent while metal shackles of the older types have dropped from 53 to but 21 per cent.

Manufacturers show no 500 mile lubrication intervals on any of the cars this year except during the breaking in period, and 1000 miles is now the standard recommendation for chassis lubrication. Many a motorist has driven in ahead of time for a grease job just because some squeaks were heard in the springs or spring shackles, but this sort of in-between lubrication will be more rare in the future since most of the current models have metal or fabric spring covers. These covers are packed with graphite grease and will give service without attention for long periods.

Some clutch release bearings will not now need attention due to the introduction of needle bearings and knife edge fulcrums. There are more hydraulic brakes than before and the brake linkage and brake cable lubrication of mechanical brake systems on several models has been simplified. Of the 14 cars of six makes which had automatic lubricators last year there are but eight cars of four makes retaining the feature.

THOUGH the usual front spring pressure lubrication points are missing in cars having the independently sprung front wheels, it will be found that in the yoke parallelogram type there are many new and additional points. Cars having this type of suspension are the Buick, Cadillac, Dodge, Chrysler 6, Plymouth, Pontiac, LaSalle, and Oldsmobile.

About the central control plate of each of these models will be found at least seven pressure points all of which are reached from below. Attendants are cautioned not to miss the central point which is the steering arm. This point can only be reached from directly beneath and it is a spot that is easy to miss.

All cars having this type of suspension have split tie rods with pressure points at each end. King bolts and knuckle supports on each side have two pressure points each.

Steering arrangement on a number of the new cars is radically changed. Aside from the split tie rods just mentioned, it will be found that the location of lubrication points has been moved forward and toward the center. In the Chrysler and DeSoto the mechanism is well

ahead of the front axle and cross-steering appears in several models.

The articulated axle and the enclosed spring arm types of front wheel suspension present no new lubrication problems, at least, for service stations. The former is used by Hudson-Essex, Nash and the Nash built LaFayette and the latter appears on Chevrolet and Pontiac. Shock absorbers are integral with the spring enclosure and they should be checked for oil level.

Wheel skirting which began last year has been carried to much greater extremes and some difficulty will be encountered in reaching grease points from the side. Adjusting the blocks on a free wheel lift for some of the more extreme bodies will have to be done on a scooter and even then the attendant will have to have a thin mid-section to slide under either front or back. Another tight place is putting engine oil into a Chrysler or DeSoto. The fill pipe is extended upward only a few inches yet it has to be reached through an opening in the top of the hood. Unless this pipe is raised to the same level as the water fill cap, which is just under the hood, station attendants will have to be unusually accurate with their pouring or build an extension for their oil containers.

The following detailed description of the lubrication changes on individual cars will aid in servicing the 1934 models.

Auburn

AUTOMATIC centralized lubrication has been dropped on all new 1934 Auburns and rubber bushings replace many of the former grease spots. On all models except the 12, spring shackles now have rubber bushings instead of bronze bearings and require no lubrication. On the 12, which is substantially the same as last year, the shackles are of the threaded bolt and threaded U type and are automatically lubricated through the centralized system. All springs are covered with metal housings and require a graphite grease at 10,000-mile intervals. The new kick shackle on the left front spring has three rubber bushings and should not be oiled.

The water pump requires no lubrication since it is of the packless type and metallically sealed. King pins have a wick oiler with a small reservoir which should be kept full of light engine oil. Four shock absorbers are the new, long, direct acting Spicers, containing about four times as much liquid as former types and giving a more uniform action, but their servicing is more of a garage than a service station job. Bushings of these shock absorbers are of rubber and require no lubrication. The same is true of the ride stabilizer connections on the rear.

Free wheeling has been dropped on the Standard 6 and 8 though the Custom 8 and 12 will retain this feature. It is still lubricated independently as before but does not require special F.W. lubricant.

Buick

THE Buick has five more pressure points than last year due to the knee action front end suspension. Screw type shackle bolts are used again this year on all models though the U-type shackle appears on the 50 series. Chassis lubricant is recommended for these points, however, instead of transmission grease as specified in 1923.

Springs are covered with removable metal housings and are packed at the factory with a 2½ cup grease to which has been added about 45 per cent graphite by weight. It is recommended that this grease be replaced every 5000 miles through holes in the housing provided for that purpose and with a greasing tool that is also part of the car equipment.

A special warning is issued regarding the lubrication of the steering gear since under pressure it is easy to force the grease up the steering column into the driving compartment. Chassis lubricant should be used and a check should be made every 5000 miles. The transmission should be checked at least every 2000 miles and flushing and draining at least twice a year is recommended. The same suggestion is made for the rear axle.

Engine oil 1000-mile points are: throttle control linkage and shaft; clutch release bearing, located on the flywheel housing and reached from the right side, a teaspoonful; a few drops on the starter; distributor is fed by a wick in the top of the cam. The distributor shaft takes fibre grease instead of cup grease.

It is easy to miss the point on the intermediate steering arm since it is not visible except when looking straight up at it from below. It is an important point, however, and one which will need attention because its position makes it subject to considerable exposure to water and mud.

Shock absorber and stabilizer links have composite rubber and bronze bushings and require no oiling.

Cadillac

KNEE action on all models of the Cadillac are the principal changes. There are now 18 pressure points at the front end, nine of which are in the center and some are easy to miss and difficult to get at. The torque tube drive which has been standard for years has been eliminated in favor of the conventional Hotchkiss drive and this reduces the number of shackles on the rear springs. Front eyes are now rubber bushed bolts and the shackle on the rear has a rubber bushed bolt on top with a screw bolt on the bottom with a pressure fitting. Springs need no lubricant.

On the universal joints the screw plug in the cross should be removed and a pressure fitting substituted to add chassis lubricant every 6000 miles. The plug in the slip joint should be similarly fitted and treated at 1000 mile intervals. The plugs should then be replaced. Front brake levers, rear brake cables and water pump are new pressure points, the latter having been a cup last year. Do not grease rear springs. The batteries on the V-12, V-16 and Fleetwood 8 are under the front fender.

Chevrolet

KNEE action on the 1934 Chevrolets has eliminated front spring bolt and shackle lubrication points, and rear spring bolts have been changed to the rubber type, thus eight former pressure lubrication spots are missing. The rear spring shackles and the rear spring saddle

Maybe it is wise to buy up distress gasoline to keep it off the market – but it's wiser not to make it

Dubbscracking is the way to make gasoline that sells – that brings the price There is never enough to go round

More Dubbscracking means less distress gasoline

And better prices

Universal Oil Products Co
Chicago Illinois

Dubbs Cracking Process
Owner and Licensor

are the same as last year except that they take a semi-fluid chassis lubricant instead of transmission grease.

No change was made in the position of the clutch release bearing which still must be reached by removing the cover plate on the toe board and the inspection cover on the clutch housing. Lubrication recommended for this point has been changed to S.A.E. 90 transmission oil for winter and S.A.E. 160 for summer instead of the latter heavy oil for year-around service.

There are 12 new lubrication spots on the front wheel suspension. Two pressure fittings are located on each radius rod and king pin for semi-fluid chassis lubricant and the plug at the inner end of the front spring unit spindle bushing is to be removed every 10,000 miles. Its reservoir is to be packed with petrolatum or soft cup grease. Front wheel bearings are to be serviced as before with No. 2½ cup grease every 2000 miles. Other front end points remain unchanged.

The rear springs are enclosed with metal housings, packed with graphite grease at the factory and the manufacturers claim that the springs will need no further attention.

As with other cars of General Motors, definite recommendations for winter oils are made. The new 10W and 20W are specified. A change in chassis lubricant was also made in the shift from transmission oil to chassis lubricant which is a more tenacious lubricant and is more resistant to water and leakage from the bearings.

Both front and rear shock absorbers may be filled as needed but owners are warned not to use any fluid of a heavier body than that expressly recommended regardless of the season. The universal joint is directly connected to the transmission and receives its lubrications from it. Do not use the fitting at this point as it was installed only for the original filling at the factory.

Chrysler

THOUGH all Chrysler models are greatly changed in design, the Six is the only car of the line which has many changes in lubrication. This is due to its front wheel suspension. The streamline models do not have this feature and most of their lubrication changes are in location of pressure points rather than an increase or decrease in number.

The Chrysler Six is equipped with the short link parallelogram type of front wheel suspension which means that it has nine new pressure fittings on the under side of the front end. The front kick shackle that required lubrication last year is missing in this model.

On the larger models the principal lubrication point changes will also be found at the front end where the engine has been moved forward 20 inches, the springs have been softened and the steering gear placed ahead of the axle. Topside oiling will have to be done down through the hinged hood top.

Chrysler Imperial Custom has a worm drive rear axle which takes S.A.E. 160 in summer and S.A.E. 11, low cold test, in winter and these oils must be non-corrosive. This car and the Imperial have planetary type over-drive transmissions with free wheeling units as standard equipment though the over-drive is special on the Eight. Non-corrosive S.A.E. 110 in summer and S.A.E. 90-80 in winter are the oil recommendations.

Engine oil recommendations for all models in summer are unchanged though for winter 10W and 20W oils are specified. Free wheeling is retained in all models but it should be noted that free wheeling lubricant is not required this year. S.A.E. 90-110 with dilution in extreme winter temperatures is all that is specified by the manufacturer. All rear wheel bearings now take fibre grease through a pressure fitting instead of semifluid chassis lubricant. Front wheel bearings are packed as before.

Universal joints also use fibre grease but only at 12,000 mile intervals. Water pumps which last year were oiled with chassis lubricant should now be filled with water pump grease. A pressure fitting is provided.

Continental

CONTINENTAL is making but one model this year, the small four, the others having been dropped in favor of export possibilities of the smaller and more economical car. Alemite Zerk fittings are still used for all chassis lubrication points and threaded bolts and shackles are used. The front spring is transverse with only one shackle, which is on the right, while the back springs are of the true double cantilever type with threaded shackles.

Universal joints are the pin type which require no lubrication. The water pump bearing takes waterproof grease and S.A.E. 20 is specified for the clutch release bearing.

DeSoto

Lubrication of the DeSoto is practically the same as the Chrysler and oil recommendations are identical.

Dodge

INDIVIDUAL front wheel suspension brings the principal changes in the lubrication of the new Dodge and adds nine new pressure spots. Tie rods and drag links which last year were rubber bushed have been changed back to pressure points. The water pump takes water pump grease instead of semi-fluid chassis lubricant and is pressure filled. Front wheel bearings now take medium, short fibre grease to repack at 6000-mile intervals. These fittings are changed slightly in their position.

The clutch release bearing is now equipped with a grease cup instead of a pressure fitting and short fibre grease, medium, should be used. This point is much easier to reach than before, though still under the floor board. An entirely new point is the clutch control cylinder mechanism which needs attention at 6000-mile intervals and requires either ice machine oil or shock absorber oil as a seal. Connections at this point, including plungers and linkage, should be given a few drops of machine oil at the same time. Universal joints are now in the 12,000-mile in-

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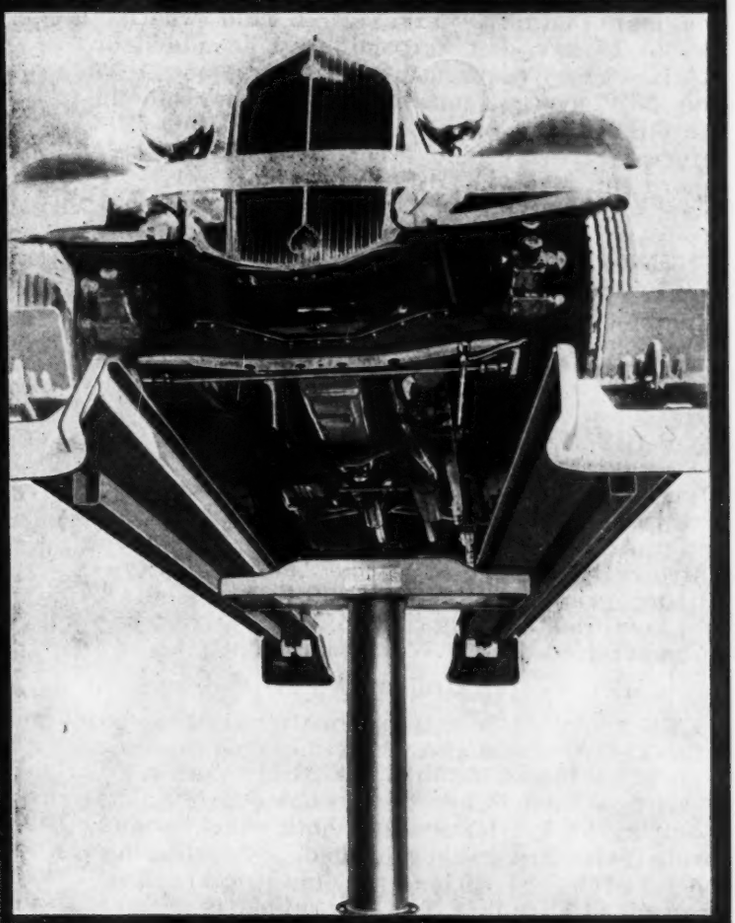
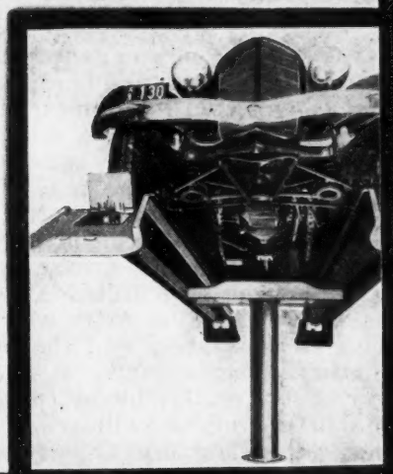
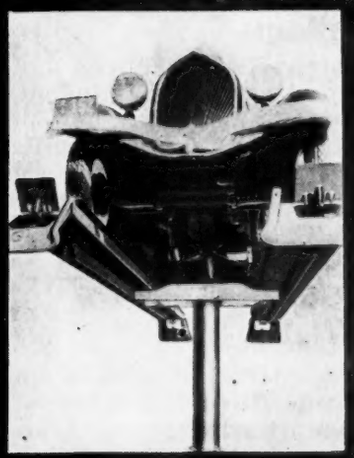




Right . . . Buick Coil Spring

Below . . . Terraplane Parallel-ogram

Chevrolet Dummy Axle



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terval class though they are still filled through plugs with fibre grease.

Though free wheeling is retained the use of free wheeling lubricant is no longer required. A fluid gear lubricant, S.A.E. 110 in summer and S.A.E. 90 in winter, is the recommendation of the manufacturer. In extreme cold weather five to 15 per cent kerosine may be added or S.A.E. 10 may be used to dilute. The new 10W and 20W are recommended as winter oils in the engine, and oil changes at only 1500-mile intervals are specified except in dusty country where the interval is 500 miles.

Ford

GENERAL lubrication of the 1934 Ford is practically the same as last year. Oil recommendations differ in the same respect as most other makes in that lighter oils are specified for both summer and winter use.

Franklin

ABOUT the only lubrication changes in the 1934 Franklin are in the shackles. The Olympic Six has screw shackles with pressure fittings instead of the Tryon type of last year and the 12 has Fafnir ball bearing shackles. Universal joints are of the needle ball type requiring graphite grease. The free wheeling unit is lubricated from the transmission which is to be serviced with F.W. transmission oil.

Graham

FREE wheeling is only optional equipment on the 1934 Graham and where used requires the same attention as 1933 models. Universal joints of all new models are the needle bearing type requiring no lubrication and both shackles and spring bolts are rubber bushed. Considering the fact that the springs are hung outboard as before it is fortunate that this rubber is used or the points would be difficult to reach with the new skirted bodies. Kick shackles on the rear of the left front spring are not to be oiled and neither are the link type, rubber engine mountings.

The fan and water pump are combined in one unit thus one lube spot is eliminated. On the new Eight, section spring covers take graphite grease. The supercharger which is standard equipment on the Custom Eight is force lubricated from the crank case.

Hudson

FREE wheeling has been dropped on the 1934 model Hudson. Universal joints are the pin type requiring no lubrication. Spring shackles and bolts are the same as those of the Terraplane and require the same attention. Springs are housed and are packed with a graphite grease at the factory and the manufacturer says need no further lubrication during the life of the car.

Accelerator, and throttle rods and shaft take engine oil every 1000 miles as do also the brake and clutch pedal bearings and the distributor. Windshield regulator dash plate, door dovetails and latch striker plates are wick fed and the reservoirs on top of door hinges also take engine oil.

Lubrication of the Hudson is essentially the same as that of the Terraplane and further points are given under that name.

Hupmobile

ALL the 1932 model Hupmobiles are to be continued for several months though three new models have been introduced. Rubber shackles all round have been dropped in favor of threaded U for front front and rear rear, the other spring suspension points being rubber. The kick shackle has one point of lubrication. Needle bearing universal joints are used on all models and need no lubrication.

Free wheeling as standard equipment has been dropped and the unit is now optional with the purchaser. Its lubrication is the same as last year. The king pins are lubricated from a small reservoir which takes engine oil. A plunger takes oil from this reservoir delivering a shot to the bearings only when the car makes a turn.

Fan pulleys on the new Eight are ball bearing and seldom require packing. Water pumps are integral with the fan on all models but need packing with waterproof grease at 1000-mile intervals and the cup should be given a turn at 300-mile intervals. Other lubrication points on the new cars are practically the same as on the 1933 models.

LaFayette

THIS was the only new car introduced this year in the low price class and is a product of Nash. As might be expected its lubrication is much the same as the Nash Big 6 and might be called a Nash Little 6. It has the same type shackles with the front eyes of the rear springs rubber bushed. The springs have metal covers which are provided with push-gun fittings for lubrication. A heavy graphite grease is used. Free wheeling and the articulated axle front wheel suspension is optional at extra cost. The former is lubricated separately and the latter requires no attention.

Heavy oil or regular brake cable lubricant is required in the brake cable conduits. Oil and grease specifications for this new car are the same as for other Nash models.

LaSalle

THE LaSalle has many body changes and is now a medium priced car. It has independently sprung front wheels and many new pressure points at the front end. (See Cadillac.) This is the only car in the Cadillac line which has hydraulic brakes thus some brake cable and linkage grease spots have been eliminated. The engine is a straight eight instead of a V. Shackles, universals and steering arrangement is the same as the Cadillac.

Lincoln

ASIDE from the standardization on a single engine for both wheelbase models there are few changes in the lubrication of the Lincoln. Shock absorber links and the brake lever shaft do not need lubrication.

Nash

NASH is offering the same type of front wheel suspension as the Hudson-Terraplane line and it, too, is optional equipment interchangeable with the conventional axle. Free wheeling has been dropped on all 1934 models. Only the

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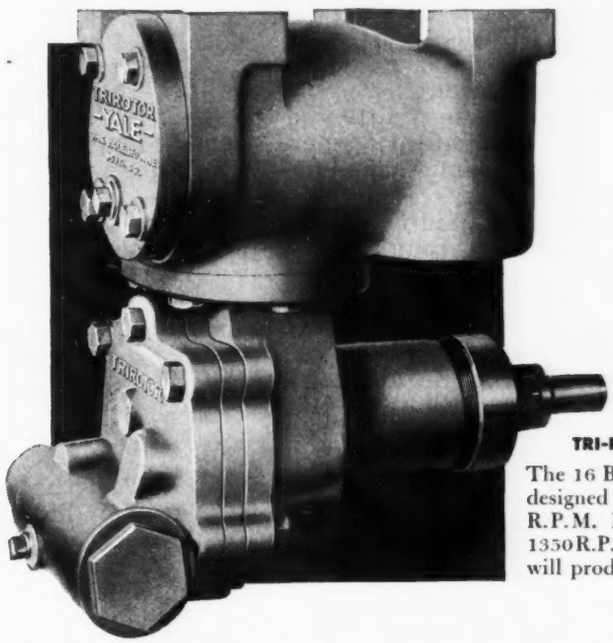

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The variable volume control in the Tri-Rotor gives a constant pressure with a controllable flow. When discharge stops, the pump is in neutral, there being no displacement in pumping members. When discharge starts the displacement always equals the discharge flow, up to the capacity of the pump.

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Ambassador 8 retains automatic chassis lubrication, the Advanced 8 and Big 6 having pressure fittings. Lubrication points mentioned below refer to these models.

The universal joints of all models have been changed from a type requiring fibre grease to a live rubber Timken type which need no lubrication. Shackles are all of the threaded-U type and the front end of rear springs are supported in rubber where oil is not needed. The tie rod shock eliminator is a new point on the small 8, though it was carried on the 6 last year, and requires heavy oil under pressure.

Lubrication of the front and rear wheel bearings is the same in all models as in the previous line and the rear wheel bearing is one point in the Ambassador 8 that it not reached by the automatic lubricator. Wheel bearing grease is used and placed in a screw grease cup. Position of the rear axle sight and drain plugs in all models is changed slightly, but the same recommendation regarding the use of special Nash lubricant for this point is still in force.

The clutch bearing oil cup is located just ahead of the gearshift and is reached through a hole in the floor mat. A few drops of motor oil every 1000 miles is sufficient and service men are cautioned not to over lubricate this point or oil will get on the clutch facings. The water pump takes water proof grease and the fan hub takes a light motor oil. It is filled through a filler plug.

Oldsmobile

KNEE action front wheels, hydraulic brakes and needle bearing universal joints on both the new Six and the old Eight have brought many changes in the 1934 Oldsmobile lubrication. The knee action is the same type as that of the Buick with all the additional pressure grease points. The hydraulic brakes eliminate all former brake linkage and brake cable lubrication except for slight servicing on the hand brake. The needle universals require no attention.

The steering gears are now the worm and roller type and need servicing only at 10,000-mile intervals instead of every 1000 miles. Pressure should not be used in lubricating these gears. Rear springs now carry threaded bolts in the front eyes as well as in the shackles. Rear wheel bearings of the Eight still require No. 2½ cup grease semi-annually in the screw cup provided for the purpose, but the rear wheels of the Six get their lubrication from the differential. Spring covers take a 40 per cent graphite grease instead of 20 per cent.

Packard

PACKARD continues the Bijur automatic lubrication system for the chassis and made no radical mechanical changes aside from a new steering gear. This gear takes three quarters of a pint of any good grade steering gear lubricant. No. 3 fibre grease is required for all front wheel bearings while the rear wheel bearings take No. 3 cup grease. S.A.E. 160 oil is recommended for all universals.

Pierce-Arrow

CHANGES in type of lubricant rather than service point is noticeable in the 1934 Pierce-Arrow. There are two drag link Zerk spots instead of one plug and the lubricant required is a pressure grease instead of engine oil. These are 1000-mile points. The steering knuckles are also changed to pressure points instead of the magazine oilers used on previous models. Universal joints are all of the needle bearing type which need no attention.

Engine oil is specified for the fan rather than the heavier S.A.E. 90. The steering column has been moved back from the 5000-mile into the 2500-mile interval and takes a regular steering gear lubricant. Both these points are screw plug holes. Hub caps on the front wheels should not merely be filled with cup grease as before but the bearings should be removed and repacked. Rear axle outer bearings have grease cups for wheel bearing grease.

A new screw plug point is the propeller shaft splines which take medium cup grease. Springs and spring shackles do not need lubrication except at long intervals and both spots are said to be dealer's jobs. No fitting is provided on the shackles. Engine oil can be injected sparingly under the spring covers or on shackles if a squeak develops.

Plymouth

Lubrication of the new Plymouth is identical to that of the Dodge, the two cars having the same type of front wheel suspension.

Pontiac

AS WITH the Chevrolet which has the same type of individual front wheel suspension, the lubrication points of the Pontiac have their major changes around the front end. There are a number of new pressure fittings. The radius rods on both sides have three points, one of which requires that the car be jacked up to lubricate. These are wheel hub bushings. There are also two tie rod points on each side. In all cases chassis lubricant is specified instead of the S.A.E. 160 which was recommended last year. It is well to note in passing that this same lubricant change has been made on all General Motors cars this year.

An all-season steering gear lubricant is recommended for the steering gear instead of the usual S.A.E. 160 in summer and S.A.E. 90 in winter. This lubricant is a uniform blend of refined mineral oil, sulfur base and containing 5 to 6 per cent calcium soap. This change at the steering point is due to the shift from the worm and sector to the worm and roller type gears. The point needs attention only every 10,000 miles instead of 1000 miles.

Shackles appear only on the rear of the rear springs where there are two points on each side taking chassis lubricant. Brake linkage should not be lubricated and the brake cable conduits have been considerably shortened thus simplifying the application of the usual graphite grease. No lubrication is required for the clutch throwout bearing.

Reo

FEW changes were made in the lubrication system of the Reo 1934 models. Free wheeling is retained and except for the recommendation

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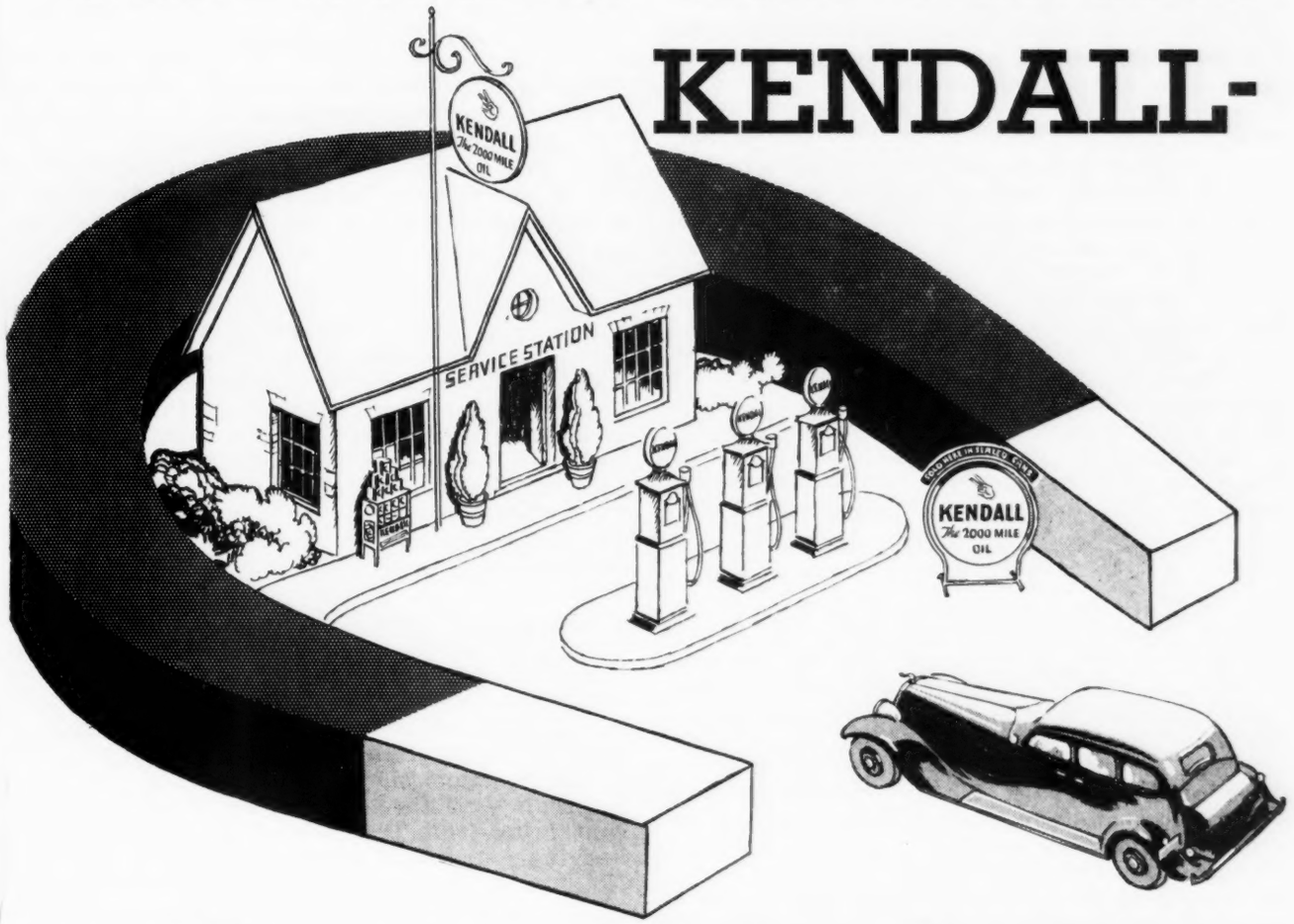

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of petroleum gear oil for summer use in this unit and the transmission it is serviced as before. This oil has a viscosity of 160-180. Universal joints on all models require fibre grease, and shackles, except the one on the rear end of the left front spring are pressure points. This single shackle is a rubber bushed kick shackle. The clutch release bearing need not be oiled for it is now wick lubricated from the transmission.

Some models of the Reo Royale have the one shot lubrication system. The "Self Shifter" which is now available on all models should be drained and refilled at the end of the first 1000 miles and every 3000 miles thereafter. This is done by removing the plug in the rear half of the transmission case. Capacity of the unit is three quarts and the lubricant recommended for winter is S.A.E. 90 E.P. transmission oil and for summer in extreme temperatures S.A.E. 110 E.P. Both of these oils were developed for free wheeling units. There is also a high pressure fitting on the housing which takes a fibre grease at 10,000-mile intervals.

Studebaker

THERE are not many changes in the lubrication points on the 1934 Studebaker. Spring shackles on all models are now of the threaded U type and take chassis lubricant while universal joints have been changed to the needle type which require little servicing. Studebaker recommends that they be repacked by mechanics at 20,000-mile intervals. The power brakes on the Commander and President Eights require about two ounces of light engine oil at 10,000-mile intervals, the oil being applied through a screw plug opening in the cylinder and plate. Brake cables take graphite grease. The brake power unit on the Six needs no oil.

No lubricant is required on the clutch release bearing of the Dictator Six, but those of the other models take S.A.E. 20. Tie rod connections are rubber bushed and should not be oiled. The water pump of the Six requires S.A.E. 30 grease while those on the larger cars need a special water pump grease. Steering knuckles on the Six take S.A.E. 110 oil for the steel core, those on the other cars being ball bearing and requiring repacking with No. 20 grease at 10,000-mile intervals.

Terraplane

THE independent front wheel suspension offered as optional equipment of the articulated axle type and requires no lubrication. For the most part the other lubrication points are practically the same as last year with the exception of universal joints which in the new models are all needle type requiring no attention.

Spring bolts and threaded-U shackles have pressure grease connections for light grease. There is no free wheeling. The clutch still requires attention but a new lubricant called "Hudsonite" is strongly recommended as being best fitted for clutch servicing. One third pint is suggested at 5000- to 15,000-mile intervals the filling point being in front of the fly wheel. This lubricant can be obtained from dealers or from the factory direct. The clutch throwout bearing requires fibre grease which is applied through a pressure fitting on the left bell housing.

Graphite grease is to be used on the longer and softer springs and the steering gear takes heavy gear oil. For the engine 10W and 20W are recommended for winter driving and only S.A.E. 30 is specified for summer, both suggestions being for lighter oils than before. Front wheel bearings should be packed at 5000-mile intervals with three ounces of No. 2 cup grease containing from 16 to 18 per cent calcium soap and the rear wheel bearings take 1½ ounces of No. 3 with the same mixture at the same time.

The new type Alemite hydraulic pressure fittings are used on all models and require an adapter or lock-on fitting for the grease gun.

Willys

THERE were no changes made in the Willys line as far as lubrication is concerned but only the 77, a four cylinder car, is to be made this year.

The transverse springs of the Ford, both front and rear, prompts the claim that the car has always had knee action as far as road irregularities are concerned

"Knee Action" Front Ends Complicate Lubrication of 1934 Automobiles

INDEPENDENT front wheel suspension is the outstanding mechanical innovation of 1934 cars. From a standpoint of appearance, both internal and external, many of the new cars present appointments and designs that are radically different. Taken separately, neither of these two features offers a difficult servicing problem, but where they are combined considerable care and time is necessary to service them with certain service station equipment.

Three new types of wheel suspension were presented this year, the short link parallelogram, the crank arm and the articulated axle. Buick, Dodge, Cadillac, LaSalle, Oldsmobile, Plymouth and Chrysler Six employ the parallelogram, Chevrolet and Pontiac use the crank arm and the "knee" axle is optional on Hudson, Terraplane, Nash and LaFayette.

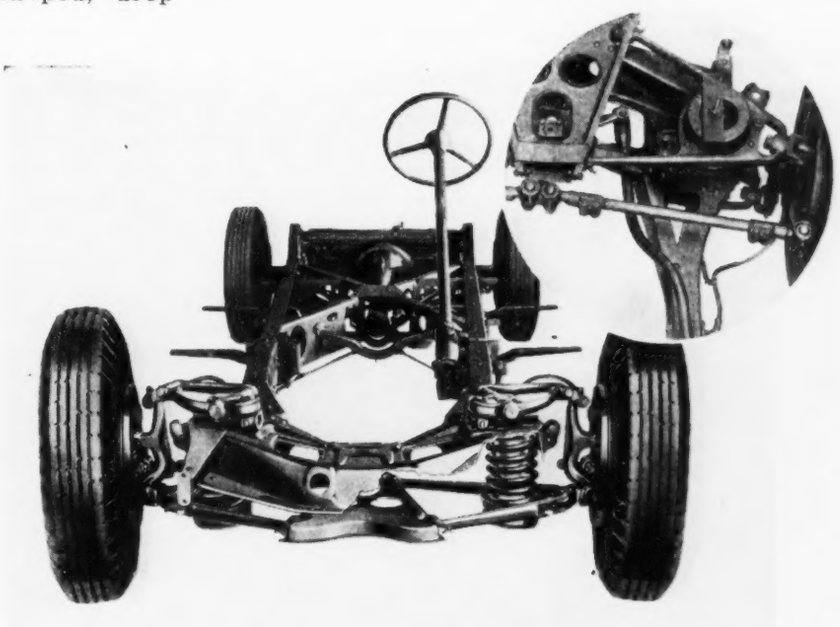
Though several maunfacturers have adopted the short link suspension idea, the construction in every case is quite similar. The greatest difference between installations seems to be one of dimensions rather than change in design but the arrangement of the steering mechanism varies considerably. A general description of the suspension type will fit all cases.

It consists of two wishbone shaped, drop forged links, the upper being shorter than the lower to hold a constant tread. The closed ends of the links are toward the wheels and the open end of the shorter link is attached to the double acting shock absorber on top of the frame. The lower link has its wide-spread arms held to a central control plate by threaded bolts. Most bearings in all these front ends are of this type and have pressure fittings.

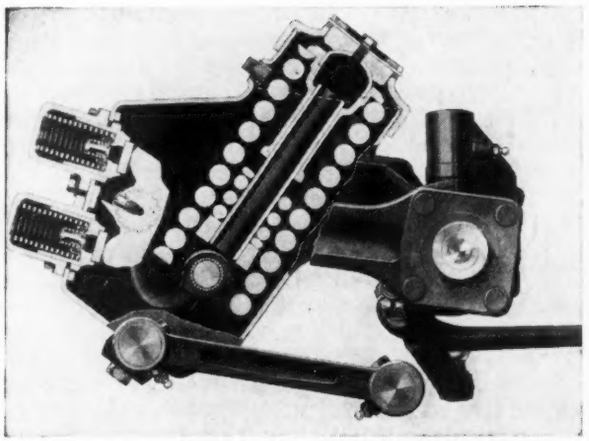
Between the two link pairs on either side of the car are helical springs resting in spring pads between the lower link arms. Rubber cone bumpers inside these springs prevent a compression of more than four inches and smaller rubber bumpers on the outside edges of the frame prevent the upper links from hitting the frame. It is well to mention at this point that in jacking up the front end using a point on the central control plate for a bearing surface, the wheels will drop down several inches as the body is raised unless 2-inch wooden blocks are placed between the frame rubbers and the upper link arms.

Steering arrangement with this type of suspension differs considerably, but in all cases it will be found that the tie rods have been split in the center. The two inside ends are attached to an intermediate arm which is bearing mounted on the central control plate or frame member and is operated by the drag link from the steering arm. It is about this intermediate arm that many steering mechanism changes center.

The total number of pressure grease points on the under front side of cars with this type of suspension varies between 15 and 20, depending on the steering arrangement. Cadillac and LaSalle have the largest number though Buick is a close second. In these cars the drag link operates a forward extension of the steering arm while in the Dodge and Plymouth short cross steering to the arm makes one less pressure point. There are two points in the central section of this type suspension on the larger cars that are easy to miss, one being in the cen-



The short link parallelogram type of independent front wheel suspension as employed by Buick. The springs rest in pads between the arms of the lower link, the inside ends of which are attracted to the central control plate. The hold-down plate which appears across the bottom of the spring pad in the circle is removed when the engine is mounted
Photo courtesy of Machine Design



A cross-section of the crank arm cylinder in the front wheel suspension of Chevrolet and Pontiac showing the double-acting shock absorbers. The upper arm is the wheel spindle arm and the lower is the radius rod. Photo courtesy of Machine Design

ter hole of the control plate and the other, the drag link, between the lower control arms on the left.

The crank arm type of suspension on Chevrolet and Pontiac consists of a sealed housing in which dual coil springs and a two-way shock absorber mechanism control the wheel action. Each front wheel is attached to a lever which extends toward the rear of the car. This lever is the crank arm and it is pivoted on needle bearings within the housing where it acts on the springs. The outer and larger spring takes the normal load of the car while the inner functions like the rubber cones of the short link parallelogram in absorbing excessive shocks.

The housing is filled with shock absorber fluid and must be kept full at all times. It is sealed against leakage but should be checked every 2000 miles. This can be done through the fill hole. There are a number of new pressure points around these units and they must not be missed if the device is to function properly.

The wheel, arm and housing operate together about the king pin as the car is steered but the steering members are not effected since they are mounted on the frame. Tie rods are practically the same as in last year's models.

The articulated axle suspension on Hudson, Terraplane, Nash and LaFayette may be treated like the conventional axle as far as servicing is concerned and it is interchangeable with it. The device consists of two drop forged I-beams with forked ends, mounted one above the other, and held at each end by needle bearing joints in vertically disposed bosses which are the inside terminals of the split axle. The regular springs of the usual axle occupy the same position they have in the solid axle.

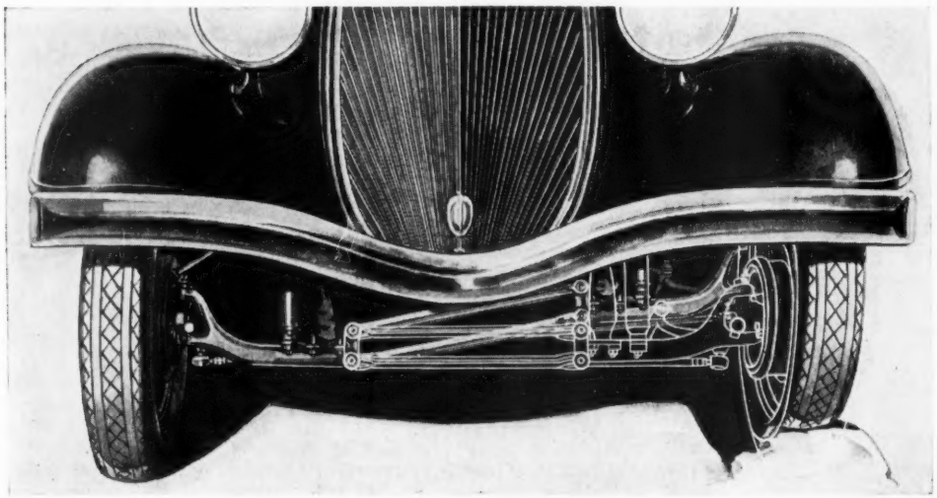
In operation the wheels are kept parallel and the spring action is one of automatic banking at the turns. The wheels incline outward at the top, the outside spring is compressed and the inner one raised up as axle flexes. This action is also common to the link type. There are no new lubrication points with this suspension design and it is only offered as optional equipment by the manufacturers.

Easy riding was what prompted not only the shift to knee action, but the moves of other manufacturers to soften and lengthen their front springs. In all cases, the change brought some interesting problems in front end balance though this was accentuated in individual wheel suspension. Frames had to be strengthened and cross braced more than ever before, tires had to be redesigned, steering mechanism was changed and shock absorber and stabilizers became much more important.

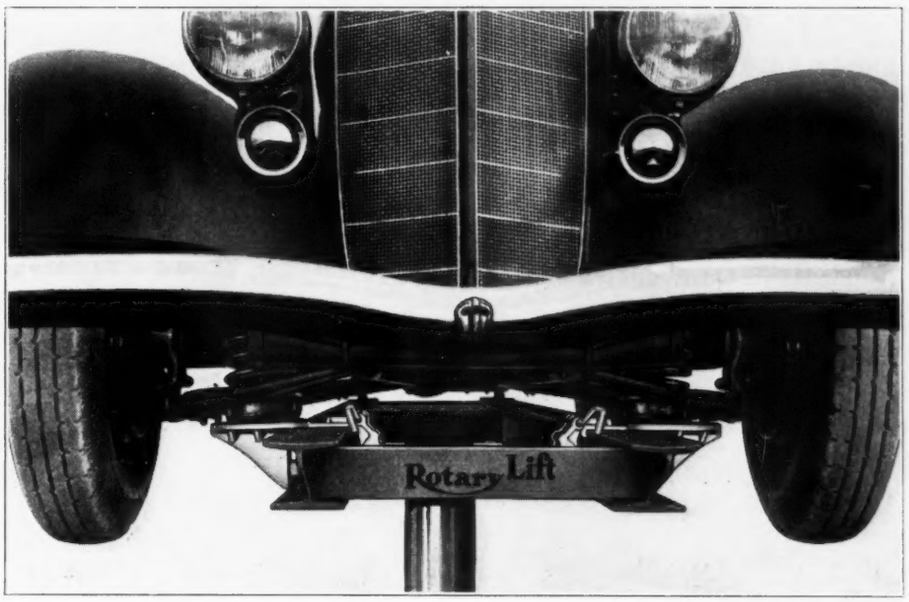
Unquestionably the automotive engineers accomplished their purpose. Most of the steering shock and the spring tramp is now eliminated. Vibration is taken up in the softer springs and stiffened frames before it can reach the rider.

From a servicing standpoint, the knee action assemblies and the low skirting of the bodies present only one serious problem, the proper balancing of cars, where both these features are combined, on free-wheel lifts. Station attendants cannot be too careful in centering one of these cars before the lift is raised to any considerable height. It is suggested that it not be tried at all until the operator has obtained from the manufacturer of his particular lift the adjustment blocks made for the new cars.

Most lift manufacturers have already built such adapters and have placed them on the mar-



The articulated axle as offered by Hudson, Terraplane, Nash and LaFayette



Rotary Lift Owners Are Ready to Service the New "Knee Action" Type Cars

How to handle the new cars need not bother owners of free-wheel type lifts, because Rotary Lift has developed an attachment for use on lifts of this kind which handles the new type as well as the conventional style cars. This attachment fits on the lift beam and provides three adjustments or support bases which are quickly and easily adjusted to suit any type of car. These three distinct support positions, all of which are combined into one unit for convenience, provide the equivalent of three different sets of attachments.

Rotary lift attachments are made to fit all standard sizes of free-wheel lift beams and to handle the new type as well as the conventional style cars.

Full information and prices gladly sent on request. Rotary Lift Company, 1056 Kansas Street, Memphis, Tenn.

NOW IN ITS ELEVENTH YEAR

THE ORIGINAL ROTARY LIFT MEMPHIS, TENN.

ket. They are not particularly expensive. Free-wheel lift owners can readily appreciate that the crashing of one car in their station means that grease jobs will be scarce from then on for news of that kind gets around in a hurry. Such an accident would be hard on all types of lifts in the same community for the public is not informed on the relative merits of the free-wheel and drive-on lifts and is likely to condemn them both. If one of the knee action cars can slip from a free-wheel lift in a Detroit automobile factory because it was not properly balanced, as one did, it can happen elsewhere unless considerable care is used in centering it.

Some of the difficulties involved in centering the new cars on this type of lift were outlined in NATIONAL PETROLEUM NEWS, Dec. 27, 1933, p. 36. This article, however, referred primarily to knee action cars without much mention of those models which have not yet adopted this idea. A week at the New York Show brought out some interesting facts in this respect concerning all makes of cars, and there is little doubt that more of the operator's time and attention will be needed to place most 1934 cars safely on this type of lift.

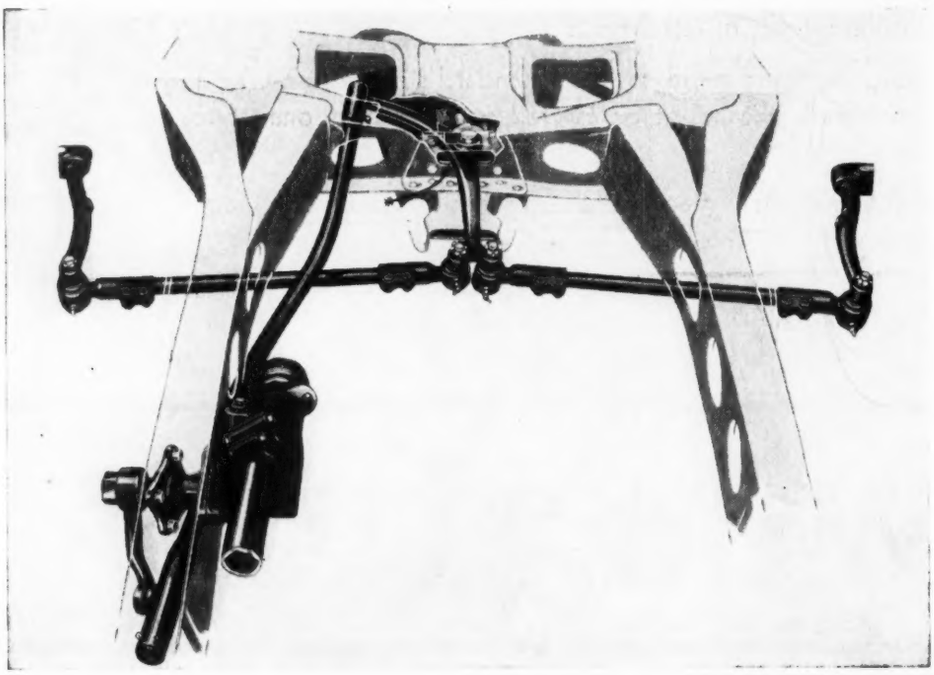
Floor clearance of fenders and running boards has been materially reduced. Front and rear wheel skirting has been extended and widened in many cases until it is almost impossible to reach under the cars at all. With a scooter or dolly an attendant may be able to slide under to adjust free-wheel lift supports, but with some of the extreme body designs it will take a thin man to do even this sliding. Tires on most models are one inch smaller in diameter than they were last year and though they are slightly larger in section this has also helped to reduce clearances.

The knee action assemblies themselves should not present a lifting problem if the adapters are made to fit them properly, for they present fairly good bearing surfaces for lifting purposes. But the attendant must bear in mind that the center to center measurement of spring pads on the link type suspension is not the same on all cars. It is 31½ inches on the Buick, 30 on the Plymouth and 32 inches on Cadillac and LaSalle. On the articulated axles of Hudson and Nash the fork bearings are but 20 inches apart. Chevrolet and Pontiac really have but 17 inches of flat center surface on their dummy axles and beyond this point the axle slants upward on each side. These two cars have the nearest approach to the old solid axle that is found on any of the knee action front ends, but they require 2-inch blocks to be level, front to rear.

There is reason to believe that the automotive industry has reached the turning point in design. If the knee action mechanisms prove satisfactory in service during this year, it is quite likely that more manufacturers will use them in 1935. Streamlining, too, is on trial and this year's models will determine the public acceptance of the idea. Predictions are already being made that if the extreme styles register well during the first six months some maunfacturers will change their conservative designs in the middle of the year instead of waiting until the end as they ordinarily do.

The rear engined car which permits the most streamlining and the best riding qualities is already a stock car in Europe and there is serious talk of at least one such car for this country next year. Such a car is but a step beyond what is now being offered. Four wheel suspension is certain to be introduced before very long.

In other words, automotive engineers have just begun to change the body and chassis of cars. Radical body changes must also be reflected in chassis changes and the under side of cars will assume a different appearance as often as the body is redesigned. As far as free-wheel lift servicing is concerned this is an important factor since it will mean that new adapters may be needed every year or so to properly handle the new points of suspension.



The steering arrangement of the Buick showing the forward extension of the intermediate steering arm which pivots at the center of the control plate. The arrow points to a pressure fitting which can only be reached from directly beneath. To the left and forward of the arrow is another important point that is easy to miss. Cadillac and LaSalle arrangement is similar to this at the front end

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(That's worth investigating Mr. Distributor)

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All the GULF Dealers on my route are busy these days. Are You?
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What! Motorists sold in homes?

Some of the letters received after a Rogers broadcast . . . proving that Gulf advertising goes home to bring motorists into Gulf stations.

THAT'S what Gulf distributors' delivery salesmen hear every day from their dealers on the highways and byways of twenty-eight states. That's what Gulf dealers everywhere are saying. Many of those dealers have written in telling us how Gulf has helped them procure more business for their stations. Their stories make *interesting* reading for other gasoline and oil dealers . . . so they have been compiled in one booklet entitled, "7 Reasons Why Dealers Prefer Gulf." Send for your copy today . . . it's free . . . and there's no obligation, of course. You'll find it both interesting and extremely instructive.

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The Romance of Powerized Lubrication

ST. LOUIS, MO.

WE ARE so accustomed to lubrication of motor cars by powerized devices that few realize that this great system is of comparatively modern origin Still fewer know about the inventive genius who was the pioneer who developed it. The story is worth telling.

Just after the war Frank S. Barks of St. Louis was manufacturing mining cars. He made good cars and sold them all over the country. One day he received an order for several hundred cars from a large coal mining company in Gallup, New Mexico. It was quite an important order and Mr. Barks decided to follow his cars to the mine and study them under operating conditions.

At the mine he went down into the depths to see his cars at work. He sat there for some time watching the long strings of coal-laden trucks go sliding by. They were of all ages and in all states of repair. Some creaked and groaned, most wheels wobbled badly. He called over the foreman:

"Chief," he said, "these cars need greasing very badly. A proper lubrication job would double the life of the cars, they would move more easily and you could get more coal out faster if they were greased."

"You're dead right, Mr. Barks," replied the foreman, "but we haven't got time to do the job. Can't take the cars out of circulation long enough. It takes time, several minutes to each wheel, to do the job. If we had some method of greasing them quickly it would be done. But a hand job is mighty slow."

Mr. Barks' mind works fast. On the train back to St. Louis he did a lot of thinking.

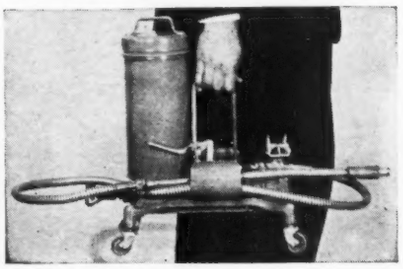
The first LINCOLN AIRLINE LUBRIGUN, built to grease mine cars. It pumped grease by compressed air.

When he reached his office he put his ideas on paper and ordered materials. Then he put his shop men to work. The result was a huge, cumbersome affair mounted on a mine car chassis. It had two 400 lb. drums, one on each end, and between them a maze of pipes, compression cylinders, valves, meters and what have you. From this maze of machinery branched two flexible hose, fitted with control valves. This was the first Lincoln Airline Lubrigun.

A string of mine cars was shunted to a track. Alongside this track the new greasing equipment was stationed. A man on each side of the track had the hose. The cars started to move past. As fast as a pair of wheels came opposite the men they each pressed the nozzle on a journal fitting and shot grease into the bearings. Then the car moved on. Soon the men became so expert that the cars didn't have to stop, but slid slowly past, each journal getting its shot of lubricant without any delay. It was a success. Then Mr. Barks shipped the new greasing device to Gallup and followed it out there.

It made such a hit that it never left Gallup. It was Number One of a long dynasty of Airline Lubriguns.

One day Mr. Barks had the idea of applying his new lubricating device to greasing motor cars. Knowing that there was air pressure used for filling tires at practically every point where lubricants were sold, he worked out a small Lubrigun operated by compressed air from the tire filler. It went over big. Now there are over 70,000 Airline Lubriguns in use practically all over the world.



The first AIRLINE LUBRIGUN built for lubricating motor cars. Compare it to the bulky, cumbersome contraption at left. It also operated by air pressure.

Today Mr. Barks' Lincoln Engineering Company is offering a complete new line of lubricating equipment, engineered to meet new motor car requirements. "ENGINEERED LUBRICATION" is planned, designed and built to meet new day motor car engineering. Automobiles have changed amazingly in the last year or two. They are different in design, in style, in power plants. Greasing instructions issued by motor car companies call for heavier, denser, more difficult to pump viscous greases. To meet the new lubrication requirements Lincoln equipment is built with more power, higher speed, more flexibility of handling. Clearances to lubrication fittings are reduced, they are harder to get at; resistances are greater. Today's LINCOLN ENGINEERED LUBRICATION equipment meets tomorrow's problems.

They will pump heavy, thick viscous greases easily. They are handier. They work faster and they are clean. The new line is complete, from tiny kit guns, to use where no air power is available, to the heaviest pumps, working from original containers.

In the line of more powerful units the ace of the new line is the LINCOLN TWIN, a new Lubrigun of extraordinary power, yet so simply built of the highest type metals that it should last a lifetime. The flow of lubricant is controlled by a valve on the delivery nozzle which means single handed operation, a marked advantage. This unit is ideal for use with fleets of buses and motor trucks, but is equally valuable for all lubrication stations. Moving parts, most subject to wear, are made of Nitralloy, the most wear-resisting metal we know of. Nitralloy is also used for moving parts in all powerized Lincoln equipment, that are subject to hard wear.

The new LINCOLN TWIN AIRLINE LUBRIGUN, powerful enough to pump heavy viscous greases.

A Lincoln innovation is the providing of distinctive "sleeves" for all large equipment. These fit over the original drums and are handsome in oyster white, black and Lincoln vermillion. Provision is made for lettering the dealer's name, or the name of his business, the decal of the lubricant or motor car he handles, and grade of lubricant. This gives advertising value to the handsome equipment, dresses the lubricating department and attracts attention to the service.

All Lincoln equipment is leak-proof, dripless, clean. It enables the owner of the lubricating station to keep his place spotlessly clean, an important thing in this age when perhaps half the auto drivers are women who will patronize by preference the clean, orderly, attractive place.

Lincoln equipment, including all types, is machined to watchmaker precision. Tolerances of working parts are almost too small to measure. So carefully is all Lincoln equipment tested, under actual working conditions, that no piece of equipment leaves the plant that doesn't qualify to the highest tests. This is a guarantee of perfection and insurance of efficiency. Announcement circulars on the new Lincoln line are ready. Write for them.

THE LINCOLN ENGINEERING CO.
5701 Natural Bridge Ave., St. Louis, Mo., U. S. A.

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Larger and More Powerful Motors

Feature of 1934 Cars

Compression Ratios Rise To 5.7:1 Average

By J. C. Chatfield
N. P. N. Staff Writer

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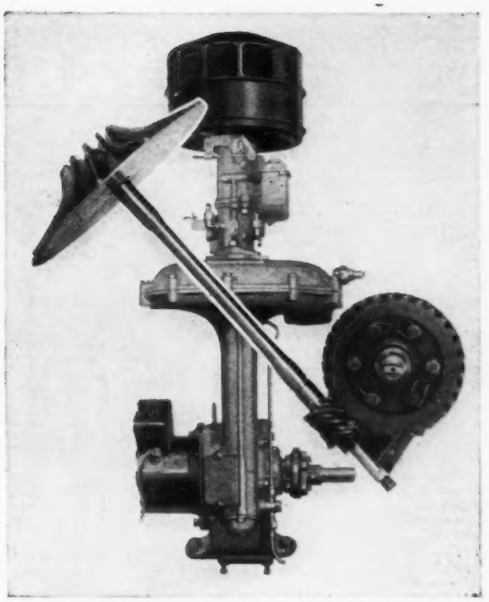

Supercharger added to the new Graham Custom 8. Rotor is superimposed to show construction. With this supercharger maximum power of the engine is increased to 135 h.p. The rotor turns at 23,000 r.p.m. When the motor is turning up 4000 r.p.m., acceleration at high speeds is increased. Photo courtesy Machine Design

MOTORS in the 1934 passenger cars are bigger and more powerful, motor speeds have been stepped up again and compression ratios are higher. There is no tendency on the part of the motor car industry to reduce operating expense materially by cutting down car weight or motor size. On the contrary the industry is stressing big, roomy, luxurious cars capable of sustained high speed operation and excess power for a quick get-away.

The more general standardization of regular gasolines in the range of 65 to 70 octane number has encouraged additional increases in compression ratios. The increases have been largely centered in low compression cars of previous years being brought more nearly in line with those of the more aggressive motor builders.

The average compression ratio of 59 passenger car models in 1934 is 5.7 to 1. In 1933 the average of 53 models which are represented by comparable models in 1934 production, was 5.52 to 1. In 1932 the average of 57 passenger car models was 5.3 to 1.

Since compression ratios of standard motors are rapidly approaching the 6 to 1 level, fewer manufacturers are offering optional heads of higher compression ratio. In 1933 there were 26 passenger cars offered with optional heads. Manufacturers of only 16 models in 1934 offer optional heads.

The average compression ratio of cars equipped with special heads in 1933 was 5.73 to 1, almost identical with the compression ratio of the average standard head in 1934. The average compression ratio of 1934 cars equipped with special heads is 6.04 to 1.

An important factor in the 1934 increase in compression ratios is the more general adoption of aluminum heads which permit higher ratios with regular gasoline. With these heads car manufacturers in some cases have built up their compression ratios to as high as 6.5 to 1 and still are suggesting that regular grades of gasoline are satisfactory. This is because of the greater heat conductivity of aluminum heads as compared with iron heads.

Studebaker, for example, stepped up its compression ratio from 5.5 in 1933 to 6.3 in 1934 by adding the aluminum head. DeSoto moved up from 5.35 to 6.2 when adopting the aluminum head. Other cars with aluminum heads this year include Ford, Graham, Hudson, Auburn 6 and Custom 8, Chrysler Imperial and Custom 8, Marmon and Plymouth Special.

On a weighted average basis the 1934 level of compression ratios is even more striking than the simple average previously given. While there are some 59 car models offered the bulk of the sales consist of eight or ten models In 1933 eight cars enjoyed 88.79 per cent of the market. They were Dodge, Ford, Buick, Chevrolet, Oldsmobile, Pontiac, Plymouth and Terraplane.

Assuming that these eight cars maintain their share of the market in 1934 and weighting their sales it is found that the average compression ratio for 1934 will be 5.78 to 1 as compared with 5.59 to 1 in 1933.

To give even better performance in 1934 many of the car manufacturers have increased motor speeds and maximum brake horsepower ratings. The average r.p.m. of 59 models in 1934 is 3421 as compared with 3359 for 53 models in 1933 and 3258 for 57 cars in 1932.

The weighted average r.p.m. of the eight leading cars in 1933 was 3339. In 1934 this is boosted to 3534 r.p.m. A year ago the leading sellers were below the average while now they are above the average. Chevrolet is chiefly responsible for this change in the leading eight, the 1934 model being speeded up from 3000 to 3300

Compression Ratios, Horsepower Output, Motor Speeds and Piston Displacement of 1933-34 Passenger Cars

	1934 Compression Ratio		1933 Compression Ratio		1934 Maximum H.P. at		1933 Maximum H.P. at		1934 Piston Displacement	1933 Piston Displacement
	St.	Op.	St.	Op.	Specified	R.P.M.	Specified	R.P.M.	Cu. In.	Cu. In.
Auburn 6	6.20	....	....	....	85	3,500	...	.....	209.9	.....
Auburn Std. 8	5.30	....	5.26	5.75	100	3,400	100	3,400	279.9	268.6
Auburn Cust. 8	6.20	....	....	....	115	3,600	...	.....	279.9	.....
Auburn 12	5.75	5.50	5.75	5.50	160	3,400	160	3,400	391.0	391.1
Austin	5.10	....	5.10	....	13	3,200	13	3,200	45.6	45.6
Buick 50	5.25	....	5.25	4.84	88	3,200	86	3,200	235.3	230.4
Buick 60	5.25	....	5.25	4.84	100	3,200	97	3,200	278.1	272.6
Buick 80-90	4.95	....	4.80	4.40	116	3,200	113	3,200	344.8	344.8
Cadillac V8	6.25	5.75	5.40	5.70	115	3,000	115	3,000	353.0	353.0
Cadillac V12	6.25	....	5.60	5.40	135	3,400	135	3,400	368.0	368.0
Cadillac V16	6.25	....	5.70	5.40	180	3,800	165	3,400	452.8	452.0
Chevrolet	5.45	....	5.20	....	80	3,300	65	3,000	206.8	206.8
Chrysler 6	5.40	6.20	5.35	6.20	93	3,400	83	3,400	241.6	224.0
Chrysler 8	5.20	6.20	5.20	6.20	112	3,400	90	3,400	298.6	293.8
Chrysler Imp. 8	6.50	5.20	6.20	5.20	130	3,400	108	3,400	323.5	298.6
Chrysler Imp. Cust. 8	6.50	....	5.80	5.20	145	3,200	135	3,200	384.8	384.8
Continental 4	5.05	....	5.12	....	38	2,600	40	2,800	143.1	143.1
Cunningham	5.00	5.63	5.00	5.63	140	2,800	140	2,800	471.0	471.0
Desoto 6	6.20	....	5.35	6.20	100	3,400	79	3,400	241.5	217.8
Dodge 6	5.50	6.50	5.50	6.50	82	3,600	75	3,600	217.8	201.3
Duesenberg	5.20	....	5.20	....	265	4,200	265	4,200	420.0	420.0
Ford V8	6.33	....	6.33	....	92	3,900	92	3,900	220.0	220.0
Franklin 6	5.12	....	5.12	....	100	3,100	100	3,100	274.2	274.2
Franklin V12	5.12	....	5.12	....	150	3,100	150	3,100	398.2	398.2
Graham 6	6.50	....	6.50	....	85	3,400	85	3,400	224.0	224.0
Graham 8	6.70	....	6.50	....	95	3,400	95	3,400	245.4	245.4
Graham Cust. 8	6.72	....	6.50	....	135	4,000	95	3,400	265.4	265.4
Hudson 8	5.80	6.25-7.00	5.80	7.00	108	3,800	101	3,600	254.4	254.4
Hupmobile 417	5.32	....	....	....	80	3,400	...	.....	224.0	.....
Hupmobile 421-421A	5.75	5.25	5.75	5.25	90	3,400	90	3,800	228.1	228.1
Hupmobile 421J	5.75	....	....	....	93	3,400	...	.....	245.3	.....
Hupmobile 422	5.47	....	5.47	....	96	3,600	93	3,600	261.5	261.5
Hupmobile 426	5.34	....	5.34	....	109	3,500	109	3,500	303.2	303.2
Hupmobile 427	5.80	....	....	....	115	3,500	...	.....	303.2	.....
Lafayette	5.30	....	....	....	75	3,200	...	.....	217.8	.....
La Salle	6.00	....	5.40	5.70	90	3,700	115	3,000	240.3	353.0
Lincoln V12	5.50	....	5.25	....	150	3,400	150	3,400	414.0	447.9
Marmon 16	5.75	....	5.75	....	200	3,400	200	3,400	490.8	490.8
Nash Big 6	5.25	....	5.30	....	88	3,200	75	3,200	234.0	219.8
Nash Advanced 8	5.25	....	5.25	....	100	3,400	100	3,400	260.8	260.8
Nash Ambassador 8	5.25	....	5.25	....	125	3,600	125	3,600	322.0	322.0
Oldsmobile 6	5.70	....	5.30	6.00	84	3,250	80	3,200	213.3	221.4
Oldsmobile 8	5.70	....	5.50	....	90	3,200	90	3,350	240.3	240.3
Packard 8	6.00	6.36	6.00	....	120	3,200	120	3,200	319.2	319.2
Packard Super 8	6.00	6.38	6.00	....	145	3,200	145	3,200	384.8	384.8
Packard 12	6.00	6.33	6.00	....	160	3,200	160	3,200	455.5	455.5
Pierce Arrow 8	5.50	....	5.50	....	140	3,500	135	3,400	385.0	366.0
Pierce Arrow 12	6.00	....	6.00	....	175	3,800	160-175	3,400	462.0	462.0
Plymouth 6	5.80	6.50	5.50	6.50	77	3,600	70	3,600	201.3	189.9
Pontiac 8	6.20	....	5.70	....	84	3,600	75	3,600	223.4	223.4
Reo S6	5.30	....	5.30	....	85	3,200	85	3,200	268.0	268.0
Reo Royale 8	5.30	....	5.30	....	125	3,300	125	3,300	357.8	357.8
Studebaker Dict. 6	6.30	....	5.50	6.00	88	3,600	85	3,200	205.3	230.0
Studebaker Com. 8	6.30	....	5.50	6.00	103	4,000	100	3,800	221.0	236.0
Studebaker Pres. 8	6.30	....	5.50	6.00	110	3,600	110	3,600	250.4	250.4
Stutz SV-16	5.50	5.00	5.50	5.00	113	3,300	113	3,300	322.0	322.0
Stutz DV-32	5.00	5.50	5.00	5.50	156	3,900	156	3,900	322.0	322.0
Terraplane 6	5.75	6.25-7.00	5.80	7.10	80	3,600	70	3,200	212.0	193.1
Willys 4	5.13	....	5.13	....	48	3,200	48	3,200	134.2	134.2
Average All Models	5.70	6.04	5.52	5.73	111.03	3,421	109.1	3,359	289.8	292.8

of 3600 r.p.m. and higher. This year 18 models are in this high-speed class.

With the addition of its new supercharger the Graham Custom 8 has increased motor speed from 3400 r.p.m. in 1933 to 4000 r.p.m. this year. Studebaker's Commander 8 has stepped up from 3800 to 4000 r.p.m.

Cadillac V-16. and Pierce Arrow 12-cylinder models have stepped up from 3400 to 3800 r.p.m. this year. Hudson 8 is up from 3600 to 3800 r.p.m. LaSalle with its new straight eight motor has increased its motor speed from 3000 to 3700 r.p.m.

New additions to the 3600 r.p.m. class include the Terraplane 6, Studebaker Dictator 6 and the Auburn Custom 8

The average brake horsepower developed at specified r.p.m. of 59 passenger car engines in 1934 is 111.03 as compared with 109.1 h.p. for 53 models in 1933. The leading sellers are below this level, of course, since they include the bulk of the cheaper cars. The weighted average horsepower for 1934 of the eight leading cars is 83.47 h.p. as compared with 75.17 in 1933. A weighted average for all cars would be nearly 100 h.p.

Chevrolet brake horsepower is stepped up this year from 65 to 80; Dodge is up from 75 to 82, Plymouth from 75 to 84 and Terraplane from 70 to 80.

The weighted average piston displacement of the leading eight cars in 1933 was 210.03 cubic inches. In 1934 the average will be 213.77 cubic inches, assuming sales of each car continue at the 1933 ratio.

As in past years a vast majority of the cars is built to operate on regular gasoline. It is only the luxury class cars such as Packard, Cadillac, Lincoln, and the like which specifically recommend a premium grade of gasoline.

In the case of Chevrolet the car buyer this year is given the proper setting of his "octane selector" for several grades of gasoline ranging from 40 to 80 octane. Following are the settings recommended in the instruction book:

Octane Rating of Gasoline	Octane Selector Setting
40	8 degrees retard
52	6 degrees retard
58	4 degrees retard
64-66	0 setting
72	3 degrees advance
78	6 degrees advance
80	8 degrees advance

The normal or zero setting is thus seen to be for a gasoline somewhat below the average branded gasoline now being offered by the industry.

Buick also mentions its octane selector this year and suggests a full spark advance if the customer uses a 76-78 octane gasoline.

For Hudson and Terraplane cars regular gasoline is recommended for both 5.75 to 1 and 6.25 to 1 cylinder heads. When the optional 7.00 to 1 aluminum head is used a gasoline of minimum 74 octane is recommended.

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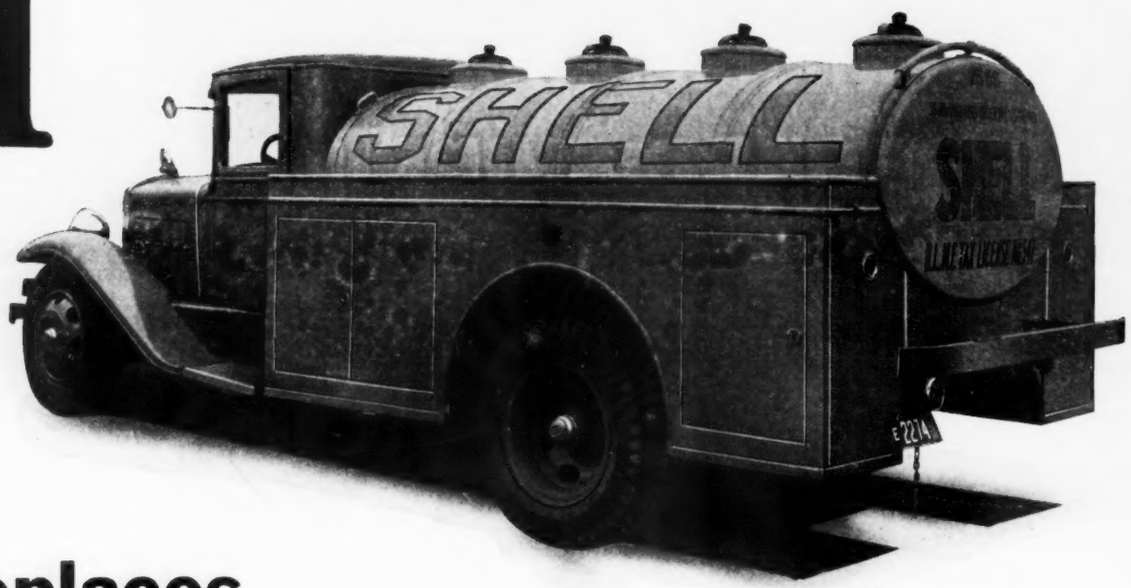

Replaces 2 Obsolete Truck Tanks

● By the use of these all-aluminum truck tanks, the Shell Petroleum Corporation was able to increase the payload capacity approximately 200 gallons per unit without increasing the gross weight over that of the steel tanks formerly in use.

● By eliminating all excessive dead-weight in the tank and underframing, it was possible to mount these 800-gallon tanks on the latest type, high-speed, light trucks. This combination of speed in traffic plus the additional gallonage carried makes it possible for one of these modern tanks to do the work of two of the heavy, slow moving units formerly used.

● The tanks are in 4 compartments with underslung can and package compartments. Meters installed in the right hand rear underslung compartments enable the driver to dump any desired gallonage. To effect the greatest weight saving, even the emergency valves, the faucets and bumpers are designed in aluminum.

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STANDARD - QUALITY - PRODUCTS STEEL WORKS

This new all-aluminum fleet will cut costs for Shell in 1934.

A streamlined car which was built as a suggestion to automobile designers by the Briggs Mfg. Co., Detroit. Its engine is carried in the rear while the space in front end which it formerly occupied is used for a spare tire, tool and baggage compartment. Note the periscope for rear vision

New Streamlining, Hooded Rear Wheels

Complicate Servicing 1934 Cars

THE chances are that every car with hooded rear wheels will have to be moved twice while inflating rear tires. Inflating spares also will be a feat on some cars. Filling radiators of many cars requires lifting the hood and will give a better opportunity to check the oil level. Streamlining of 1934 cars is only partial but will have some effect on gasoline consumption.

THE automotive industry believes in presenting its products either in a new way or in an entirely new dress every so often to stimulate buying interest. A new talking point is found each year which the public will listen to. These changes are usually bona fide improvements though many of them are mere refinements which create a new interest in a standard product. The oil industry could profit by studying the principle.

Aside from the great mechanical change in front wheel suspension, a subject discussed elsewhere in this issue, another new talking point this year is streamlining. The recent National Automobile Show presented an interesting study of this feature with body designs ranging between complete departure from the conventional to slight concessions to the trend by giving bodies more sleek lines. These lines are calculated to give the impression of speed and reduced wind resistance, which they do to a limited extent, but underneath, the chassis is often almost identical to the previous year's model.

However slight some of these body changes may be, they indicate an unquestioned advance in design. The extreme models like the Chrysler and DeSoto are really only extreme at first glance and observers will find that they soon lose their odd look. After a first inspection it is only a short time before the conventional bodies begin to look odd, for the streamline idea grows on one rapidly.

After all, the streamlining of the body is a natural and logical move since engine power and efficiency has long been considerably greater than needed by the average driver. Engine development outdistanced that of body design long ago. Engineers who have made a study of the subject say that with the average sedan fully half of the engine power is used in overcoming wind resistance at a speed of 30 miles per hour. At 60 miles per hour or more it is said that five-sixths of the power is required to overcome this force.

Carrying this argument to its logical conclusion brings some interesting speculations. If the body lines can be so changed that wind resistance can be halved and air drag at the rear

is reduced in proportion, engine power can be greatly reduced without a sacrifice of speed. Such a reduction in engine size would mean a similar reduction in fuel and oil requirements, a circumstance which would be of particular interest to the oil industry.

There are a number of factors which will tend to limit progress along these lines, however. If speed were the only consideration it is possible that some such development would soon take place, but starting characteristics and maneuverability in traffic are much more important. These two factors require considerable power and unless the weight of cars is also reduced far below their present average the small and economical engines mentioned above would not have sufficient power to meet the demands.

If the engines remain at their present horsepower (approximately 100 h.p. is the average of the 1934 cars) or in that general vicinity they will retain all the needed characteristics for city driving and will be able to take more advantage of the reduction in wind resistance brought about by streamlining. They would have power to handle the lower driving ratios for high speed on the road. The dual ratio of the Auburn and the overdrive offered in some other cars illustrates this point and similar gearing is likely to appear on other cars.

As the wind resistance is reduced, however, the engine will have less work to do and can operate at lower speeds and temperatures which will bring about a considerable fuel and oil saving. It may be assumed then, that even though the most extreme 1934 body lines are only partially streamlined compared to the ideal form, there is bound to be some fuel economy in their operation. The trend is in that direction and the time when something closely approaching the tear drop design is common is not far distant.

The body designed by Briggs Manufacturing Co., (see illustration) as a suggestion to motor car designers last summer has already lost much of its uniqueness even though it was looked on as a cartoonist's dream a few months back. Streamlining has been carried considerably further in this body than in any of the new designs. The engine is in the rear and the owner now rides in the comfortable position it formerly occupied. Wind resistance has been reduced to a minimum and it will be noted that the only protruding piece of equipment is the periscope for rear vision. It is probable that this car would considerably reduce what is now thought to be normal gasoline consumption.

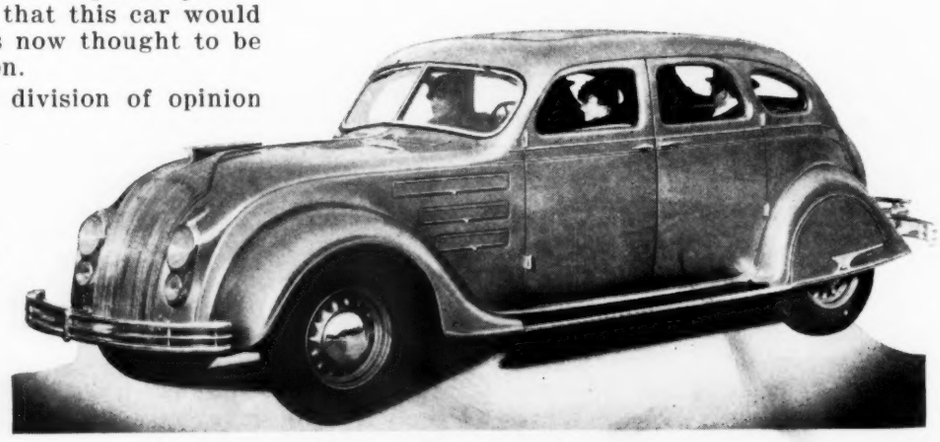
There seems to be some division of opinion among automotive engineers as to the best way to streamline their cars. Most manufacturers have approached the problem from the back end rather than from the front of the car, their reasoning being that the elimination of air drag on the rear was more important than reducing the push on the front. The most outstanding example of this design is the Pierce-Arrow which has a sharper nose than ever before but has a rear end that slopes at a decided angle. This car was the freak of the 1933 show, but it is a stock model today.

Chrysler worked on both ends and Hupmobile did likewise though not to the same extent. All makes have more sloping windshields and only a few have retained the flat body back, the degree of slope having a wide range. It is quite evident that manufacturers are not yet convinced that the public will take to the streamline idea for there is not one who has gone all the way with all his models. Sales of 1934 will tell the story, however, and if there is as wide an acceptance of these semi-models as present orders indicate there may be, 1935 will see most pleasure cars come out in what is now considered radical design.

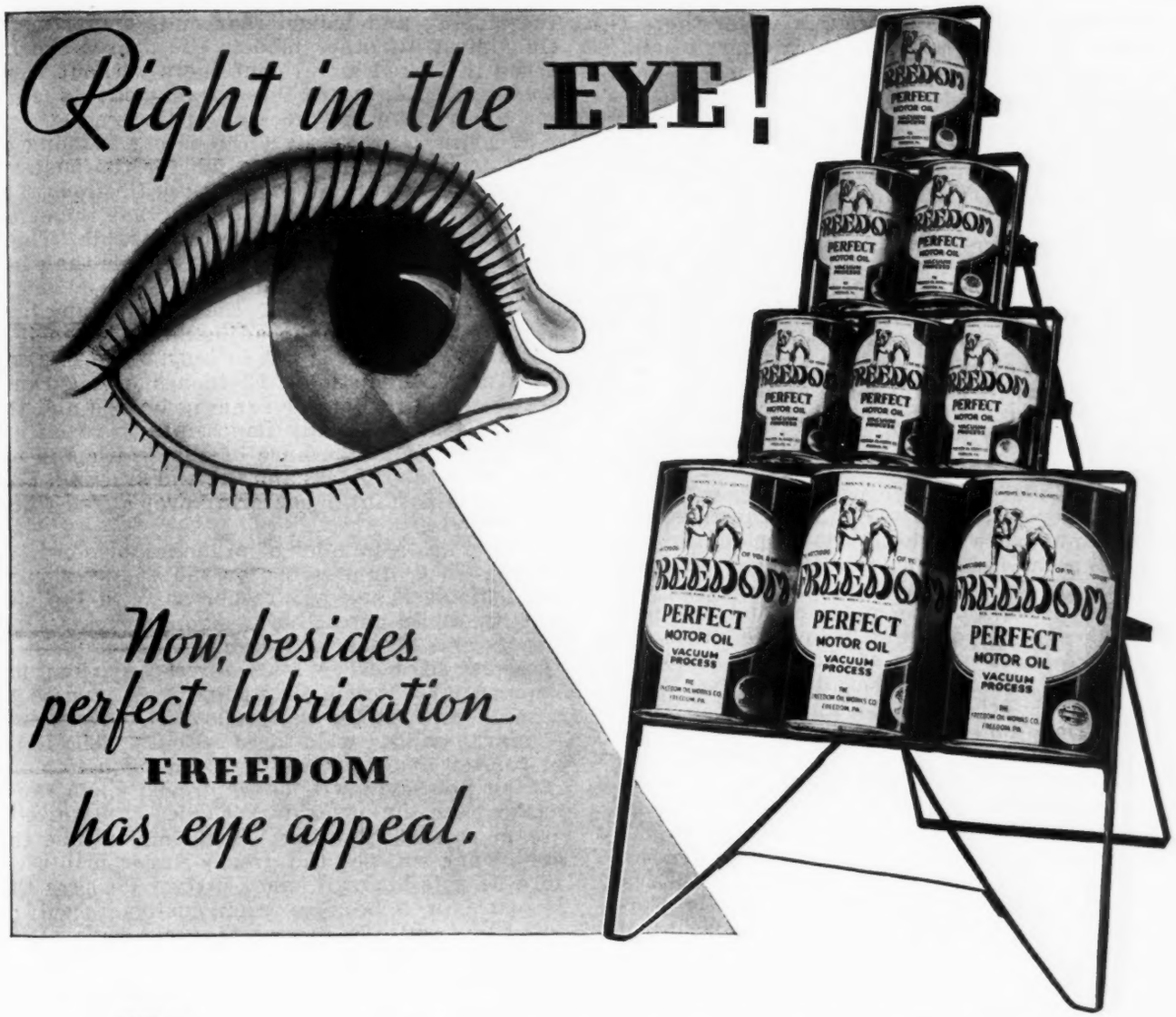
There may be some hesitancy at first on the part of the buyer just because of the external appearance, but once he has sat in the roomy interiors and has had the comfortable ride these cars can give, the outside will become a matter of minor importance. This will be particularly true if "the wife" is along for the luxurious appointments and comforts of even the moderately priced cars are on a par with those of the snooty models a few years ago.

Aside from the certainty that streamlined bodies will bring some oil and fuel economies, there are a number of other things about them that will interest oil men in the marketing end of the business. It is true that most of these things are small, but many of them mean extra time, which is more expense, in servicing.

Most of the radiator caps are under the hoods and that means more work for the service station man. This point has its advantages though in that only one man can work on a car servicing the two points, water and oil, and this keeps the customer in the station a little longer. The second man, where there is one, will have more time to get off an accessory sales talk as he cleans the windshield or dusts around. With



Streamlining in the new Chrysler does not go quite as far as the Briggs design but wind resistance and air drag have been materially reduced. Note the hooded rear wheels



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the hood up anyway to put in water there is a better chance to sell that extra quart of oil.

On the Chrysler and DeSoto the matter of oil servicing is something of a feat with the present arrangement. Only the central panel of the hood lifts up. The lock handle of this panel is at the bottom of the radiator in front and the hinge is across the top in front of the windshield. The radiator cap is on the left side and flush with the inside top of the panel, but the oil fill pipe is short and its top is more than a foot below the hood. This description fits those models displayed at the New York Show though it may be changed in the cars offered to the public.

Since the oil pipe must be reached from above and there is very little space on its sides, reaching it without spilling oil is going to require considerable accuracy. Either these pipes must be lengthened or extensions must be built on oil can nozzles and bottle tops.

Another little point what will cause considerable annoyance to both the station attendant and the car owners is the hooded rear wheels which are so decorative on such cars as Cadillac and Nash. These hoods extend down over the wheels to a point well below the hubs so that only the lower portion of the tire is visible. It is more than an even bet that the valve stem will be somewhere in the upper half when the tires are to be checked. It will seem that way at least as the car is pulled or pushed to roll the valve down where it can be reached. The process must then be repeated for the other side. Wheel hoods can be removed, and rather easily at that, but it takes a wrench to do it.

While on the subject of tires it is well to note that the spare tire on Hudson, LaSalle, Terraplane and several other makes are carried inside the sloping and locked rear end compartment. On almost all other models the spares are incased in locked metal containers without valve openings. Neither of these arrangements is going to speed up the checking of tires.

Washing a really streamlined car is going to be a comparatively simple job for the surfaces are flatter and there are fewer projections. The same is true of polishing except that imperfections in the job will be more noticeable. There are more steel spokes and disk wheels than last year and more split windows.

Getting under one of these low hung and skirted bodies to make adjustments when it is not on a lift or pit is not so easy. There is seldom more than 10 or 12 inches of clearance between the fenders or running boards and the floor. It is practically impossible to reach under these bodies because of the width and extension of the fenders and the end skirting. This point is important in centering over a free-wheel lift.

There are a number of other minor servicing points. The air pressure on the widely sloping windshields is upward rather than to the side and this has necessitated stronger windshield wipers and blades of a different type. Most of the new tires carry lower pressures than has been usual. Retouching paint will have to be a stock product for the curbs will leave plenty of marks on low, wide faced fenders. The lighter colored upholstering that is common to many of the new cars will show grease spots much easier than the usual dark shades and white or cream colored steering wheels mean that the car owner will see the greasy finger prints before he gets his own hands dirty. Perhaps this is just as well because fewer customers will be lost as a result.

Self Shifter is Continued by Reo in 1934 Models

THOUGH introduced last spring, the self-shifting transmission of the Reo was featured for the first time at the New York Show. The function of the device is to automatically select the proper gears for different operations without any effort on the part of the driver. It consists of an automatic unit and an auxiliary set of gears for selective control. The conventional gear shift lever is dispensed with and only a small dash lever is used for starting and reverse.

The manufacturer recommends an SAE. 90 E.P. lubricant for both winter and summer in the whole transmission unit. During extreme summer temperatures an SAE. 110 E. P. lubricant is advised.

The unit has a capacity of six pints and changes are recommended at the end of the first 1000 miles and each 3000 miles thereafter. Under normal driving this means a lubricant change three or four times a year. There are two drain plugs in the housing though it is provided with but one fill hole which is situated on the left side of the case. There is also one high pressure grease fitting in the shifting mechanism which takes a fibrous lubricant at 10,000-mile intervals.

The internal gear train of the Reo self-shifter. Power coming from the spline shaft to the center of the automatic unit actuates integral gear P. This gear is meshed with R which in turn meshes with the large main gear Q. The latter is directly connected with the propeller shaft. Around the circumference of the large drum S are located governor weights K which tend to move outward by centrifugal force as the car speed increases. At approximately 14 m.p.h. these weights move outward and engage multiple discs when the unit rotates with the spline shaft with no further gear reduction, thus the transmission is placed in high.

ADVERTISING PAGES REMOVED

New Uses Demand New Types Of Lubricants for 1934 Cars

By Arch L. Foster
N. P. N. Staff Writer

MORE severe conditions are imposed in the newer cars, on many types of lubricants. Older types are not satisfactory in many cases, since they were designed to handle conditions which were less severe than those now encountered. New refining processes are producing new oils capable of service not given by the conventional lubricants.

For a more detailed discussion of the components used in different classes of lubricants, the reader is referred to the article, "Composition of Automotive Lubricants," in NATIONAL PETROLEUM NEWS for January 25, 1933, page 48.

LIGHTER oils for winter use, hydrogenated and solvent refined oils, special oils of extremely high viscosity index, special chassis lubricants, are some of the new ideas developed during 1933 in lubrication of automotive equipment. The problem of extreme pressure lubricants for hypoid and similar rear-axle gears is slowly making progress, but 1934 cars have not advanced in the adoption of these gears.

The Lubrication Research Committee of the Society of Automotive Engineers has studied the extreme pressure lubricant problem intensively. A satisfactory testing machine has been developed with the co-operation of the Bureau of Standards, and further study of the manufacture and action of these lubricants is under way.

With the considerable increase in engine speeds, road speeds, temperatures and pressures on bearings, the lubrication problem continues to become more complex. Winter starting of the newer types of cars assumes greater importance as clearances are reduced in manufacture to produce more efficient car engines. The effort made for years by automotive engineers to induce the consumer to use lighter winter oils has borne fruit in the proposal last November to use two new classifications this winter, designated tentatively as 10-W and 20-W, for winter oils.

These have not been officially adopted as winter grades by the S. A. E. but are under trial this winter to determine what changes, if any, should be made in the tentative specifications. These classifications are on the basis of viscosity at zero, F., only. Oil 20-W ranges from a minimum of 10,000 Saybolt seconds to 40,000 seconds maximum at zero, and is recommended for use in winter wherever the lowest expected temperature is not below zero. Oil 10-W is recommended for use where this lowest temperature is between zero and 15 degrees below zero with 5000 and 10,000 seconds as minimum and maximum. For winter temperatures likely to go below minus 15 F., 10-W is recommended when blended with 10 per cent of kerosine.

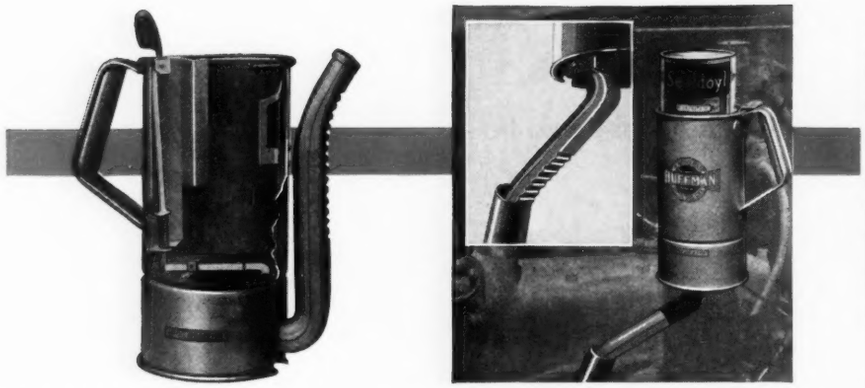
These oils are being tried all over the country this winter season; refiners are making them from a variety of crudes. Automotive engineers and refiners point out that they are fluid at the lowest starting temperature likely to be encountered if used as recommended. They permit starting without the time loss and troublesome bother associated with the use of heavier oils. Many of the heavier grades previously used in automobile engines for winter have a viscosity at the starting temperatures of as high as 100,000 seconds, the consistency of extremely heavy molasses or of tar.

It is proved that, no matter how heavy the battery and how powerful the starter, an engine cannot be started at a low temperature, unless the engine develops enough power when cold to overcome the friction resistance, even if the starter is strong enough to turn it over for an indefinite period. The heavier the oil, the greater the friction resistance.

TESTS show conclusively that the average viscosity which will permit the average car to start at zero is about 30,000 seconds, and, allowing for some dilution in use, the maximum of 40,000 is set by engineers. Many cars will not start with an oil as heavy as that, at zero. A few will start with heavier oils; one started with an oil above 70,000 viscosity on test, but is not representative of cars in general.

Automotive engineers say, and conditions support this view, that it will be desirable and necessary to use much lighter oils both winter and summer, than has been the custom heretofore. The tremendous drag placed on the moving parts by heavy oils dissipates a large percentage of the total power of the engine delivered to the piston. Wear of bearing and journals, valves, etc., is appreciably increased when too heavy oils are used.

With the present high engine and road speeds, the drag of heavy oil increases far faster with increased speed than the ratio of the speeds. As bearing speed increase, the viscosity of the oil



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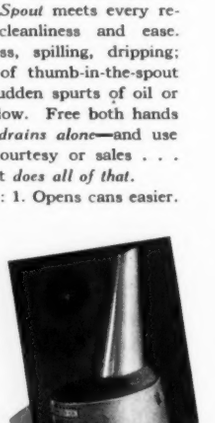

(Note — Huffman devices are fully protected by patents issued and pending.)

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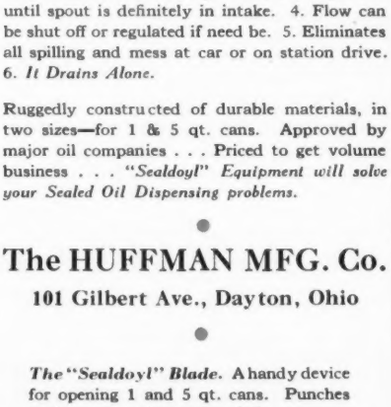

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by R. H. Thomas

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needed to maintain a film is decreased. At a bearing speed of say, a few hundred r.p.m., an S. A. E. 40 might be needed to lubricate the bearing; at 4000-5000 r.p.m., an S. A. E. 10, or 10-W, would be quite heavy enough for all purposes. Many engines this year are up to or near 4000 r.p.m. at maximum power; necessarily they demand a lighter oil.

More interesting recent developments have been in synthetic lubricants, and in hydrogenated oils made by the process developed by Standard Oil Co. of New Jersey, and the I. G. Farbenindustrie of Germany. Standard of Indiana has developed Syntholube, made by cracking paraffin wax or other petroleum fraction, and recombining these molecules to form molecules of the lubricating oil type, using aluminum chloride as a catalyst. This oil is characterized by a high viscosity index, that is, relatively little thinning out under high temperatures, and by the deposition of a relatively small amount of carbon in the engine. It is used as a special oil for severe service conditions, and wherever the user wishes an oil of these special properties.

Essolube, made by hydrogenating heavy petroleum fractions, has high viscosity index, low carbon formation, low pour point, and good oxidation stability. It is advertised as the only hydrogenated oil on the market, and along with other oils made by the new processes, typifies the modern trend in lubricant manufacture. Treatment of oil fractions with aluminum chloride, such as the making of Gulfpride by that process, is also one of the types of oil, and process that are changing the picture of lubricants and their properties.

The tendency now is away from the practice of using transmission oils as chassis lubricants. H. C. Mougey, chief chemist and assistant director of General Motors' research laboratories, says that the use of transmission oils for chassis lubrication has grown up probably because motor manufacturers have felt them to be superior to ordinary cup greases (See NAT. PET. NEWS, Nov. 1, 1933, page 26). Five grades of chassis lubricants were pro-

posed by Mougey and given in the above reference.

These grades are divided into three groups, one each for winter and summer chassis lubricants proper, one each for winter and summer use on wheel bearings, universal joints, etc., and one for water pumps. These represent two types of greases, those which are water-resistant, and those resistant to heat.

For water-resistant greases, aluminum or calcium soaps are mixed with oils of different viscosities; these are used where little heat is generated or encountered in service.

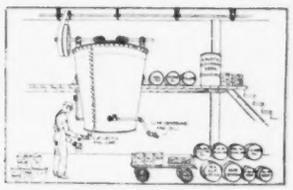
Where considerable heat is generated in use, or received from the engine, heat resistant greases are used. Soda soap greases, water soluble but resistant to separation caused by heat thinning the oil, are used for such greases.

One of the difficulties of using transmission oils for chassis lubrication, is that these oils have a tendency to leak out of bearings in use. The tendency now is in many instances to use a lighter mineral oil, say of a viscosity of 300 to 500 Saybolt seconds at 100 F., as recommended by General Motors this year, combined with not more than 8 per cent of a water insoluble (calcium or aluminum) soap. Transmission oils usually contain not more than about three per cent of soaps, with a heavier oil.

Steering gear lubricants, in some cases, have begun to take on the characteristics of extreme pressure lubricants, and with good reason. In the nature of the steering mechanism, a low temperature and a lubricant which increases in viscosity (stiffness) with lowering temperatures, the force needed to operate it may become excessive in cold weather. Also, because of the gear design, it is necessary to use lubricant heavy enough to maintain lubrication in high temperatures.

One steering gear lubricant recommended contains mineral oil of 240 to 310 Saybolt at 100 F., viscosity, a pour point 20 degrees below zero, F., about two to three per cent of sulfur, and up to 20 per cent of a saponifiable oil, that is, one which will combine with the sulfur to form

Grease and Oil Compounders



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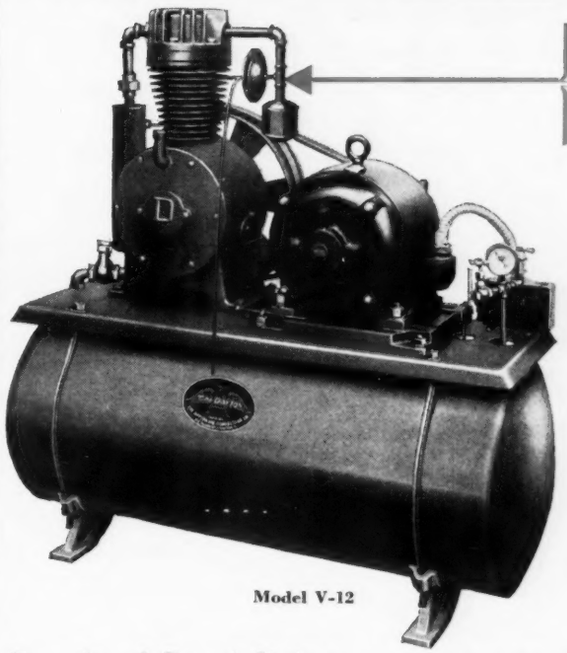

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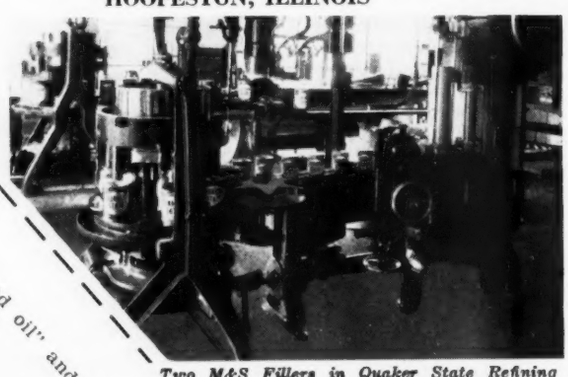

Two M&S Fillers in Quaker State Refining Co. plant at Emlenton, Pa.

a lubricant of extreme pressure properties.

These properties give an oil of low viscosity in winter, making the wheel easier to handle. The extreme pressure characteristics permit the use of the same oil in summer with good results. One of the requirements of this oil is that it does not change its consistency, (thickness) appreciably when heated to 175 F. (about the boiling point of alcohol) for an hour, a test designed to show that it will not easily thin out and run out of bearings.

Before the adoption of four-wheel brakes, it was customary to pack front wheel bearings and hub caps with cup grease, the more the better. Since grease on the brakes is dangerous and undesirable, this condition no longer exists, and a different type of lubricant is called for. The new lubricant must not "bleed," that, separate oil from soap and allow the oil to drain into the brakes. Low viscosity oils used in cup greases bleed and flow easily under the higher temperatures of the present wheel bearings.

Long-fiber soda soap greases, which resist heat better than aluminum or especially lime (calcium) greases are now employed, along with heavier oil so that separation is less likely. In this way less grease is needed at one time, brakes are not fouled, and the grease is replaced or replenished less frequently. Sometimes some lime soap is added to the grease to increase its resistance to water.

Amerada Has New Purchaser

TULSA—E. A. Cook has been appointed purchasing agent for the Amerada Petroleum Corp., Tulsa headquarters. Mr. Cook has had years of experience in this work. He joined the purchasing department of the Roxana Petroleum Corp. in 1915, immediately after completing his work at Oklahoma University. In 1916 he went with the Twin State Oil Co. as purchasing agent and assistant treasurer, remaining there until 1930. In February of that year he became purchasing agent for the Independent Oil & Gas Co., remaining there until the merger with Phillips Petroleum Co. Until recently he served with the receiver of Central Petroleum Co.

Hydraulic Fittings Found On Many 1934 Cars

CLEVELAND—The new Alemite "Hydraulic" pressure fitting with which so many of the 1934 cars are equipped closely resembles the Zerk fittings made by the same company and which have been almost universally used for some years. Externally the ball shaped top is the only noticeable difference. Inside there is a spring which supports a small ball against the port and keeps out dirt and grit.

The coupling which fits these fittings is specially made for them and can be purchased as an adapter tip on guns already in stock. The accompanying illustration shows how this coupling works. When it is attached to the fitting a locking action creates a perfect seal between the two. The jaws of the coupling close around the tip and hold it firmly in place until the operator pulls the gun away.

It is not necessary to hold the coupling in place nor to exert any pressure behind it to avoid leakage of lubricant around the sides. The coupling is so close that no leakage occurs and the higher the pressure under which the grease is forced through the gun, the tighter will be the seal at the coupling point.

Sectional view of the new Alemite "Hydraulic" pressure fitting with which most of the new car models are equipped and the gun adapter tip in coupling position

QUESTIONS

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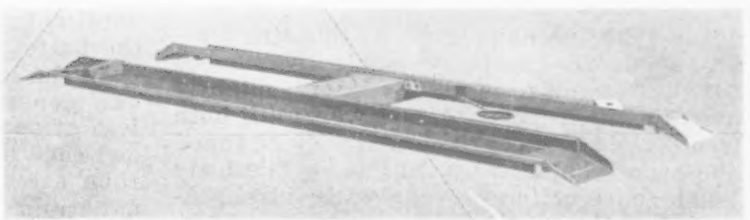

Trend of new cars makes the New Ottawa Lifts a necessity

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Larger Tires of Changed Construction And Bigger Batteries on 1934 Cars

NEARLY half of the 1934 cars have tires of new construction and of larger size than the corresponding models of last year. They also operate on lower pressures. Batteries, too, are larger in many instances to accommodate the greater changing capacities of larger generators.

Due to the fact that mechanical and wind noises have been greatly reduced and to the changes brought about in load distribution by shifting weight forward, a change in tire size and character was necessary. The new independent front wheel suspension was another important factor in bringing about this change.

In almost all the cars where individual front suspension is not used front springs have been made considerably softer, a change which emphasized front end tramp at high speeds. As with the knee action cars it was necessary to overcome this defect in some way if the riding qualities sought were to be obtained. More accurate balancing of front end assemblies through mechanical changes in brake drums, wheels, etc., helped in eliminating the difficulty.

Experiments with the low pressure or doughnut tires that were already on the market were unsatisfactory because they seemed to be unusually noisy on knee action cars yet it was desired to take advantage of the cushioning effect which they possessed.

Thinking that perhaps much of this tire difficulty was due to the tread, perfectly smooth tires of the same size were tried, with slightly improved results. It was not, however, until both the tread and tire construction was changed that the proper balance was obtained. The body and bead construction were greatly strengthened to build resistance to greater flexing stresses and the angle of the fabric changed to reduce car weaving. Most of the tires have a flatter tread profile. Shoulders and rib edges are rounded instead of angular and the number of ribs reduced from five to four.

The experiments with different tires show a definite trend toward the use of 16-inch diameters to be used on wider rims. Graham, Hupmobile, Buick, Auburn, and Olds are a few of the cars that now have the 16-inch instead of the 17-inch diameter tires and the tire section has been increased as much as an inch in some cases. Chevrolet and Ford are using a 17 instead of an 18-inch tire while Pontiac retains the 17-inch tires of last year but increased their section half an inch.

Gravel throwing is another factor that was considered in the changes made in the tire treads because most fenders are extended much further back of the wheels than before. In the fenders of Hudson and Terraplane a screen prevents gravel being thrown back against the metal and Studebaker use a plate for the same purpose.

Pressures recommended for these tires range from 21 to 25 pounds with a 3-pound increase when the tires are hot. Skidding tests with the new tires under wet weather conditions have proven them to be more steady and much quieter.

The constantly increasing loads that have been put on batteries and electric generating plants due to radios, heaters, etc., has brought some changes calculated to help out the battery. In many of the new cars the number of battery plates has been stepped up considerably, a 20 per cent increase in the case of Hudson and Terraplane which now have 19 and 17 respectively. Oldsmobile and Dodge have 17 and 15 plates respectively.

THE third-brush output control system has been the standard for a number of years, but this year it has been largely discarded in favor of the constant-voltage control or the lamp-load control. In the former system the charging rate automatically is increased as the battery voltage runs down, thus the charging rate is dependent on the condition of the battery. Chrysler, DeSoto and Plymouth are among the new cars which have adopted this method of aiding the battery.

In the lamp-load control system the output of the generator is maintained constant regardless of speed but as soon as the headlights are switched on the output is increased. The lights then are taking their power directly from the generator without draining the battery. Oldsmobile and Cadillac use such a system.

In both of these systems the generators are forced to greater labor and it has been necessary to cool them by forced draft. This has been done by air scoops in some models and by fans in others. Hupmobile has the fan system of cooling and has increased the generator output by 40 per cent.

The general effect of this change to batteries with more plates and greater ampere-hour capacities will be to reduce the number of times they will have to be recharged during the year. Increased size and speed of generators will keep the current supply up better under the increased demand and since much of their current will go direct to the point of use without passing through the battery the latter should wear longer. Although battery sales may be in smaller volume, the size of the sales will be bigger due to the increased cost of the larger unit.

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Ice-O-Matic Domestic and Commercial Refrigeration

PASSENGER CAR CAPACITY CHART

Corrected to January 26, 1934. (Copyright, 1934, by National Petroleum Publishing Co.)

Make & Model	Cooling System (Quarts)				Gas Tank (Gallons)			Crank Case (Quarts)				S.A.E. Vis. Oil		Oil Fill Pipe	Transmission (Pints)				Transmission S.A.E. Vis. 1934-3-2-1		Differential (Pints)				Differential S.A.E. Vis. 1934-3-2-1	
	1934	1933	1932	1931	1934	1933	1932	1934	1933	1932	1931	Sum.	Win.		1934	1933	1932	1931	Sum.	Win.	1934	1933	1932	1931	Sum.	Win.
Auburn 8	19	19	19	21	20	25	20	8	8	8	8	40	20	R	3	3	3	2½	110	110	4	4-6	4-6	3	110	110
Auburn 12	37	37	37	—	25	25	25	9	9	9	—	40	20	L	3	3	3	—	110	90	4	4-7	4-7	—	110	110
Austin	6	6	6	6	5	5	5	5	2½	2½	2½	30	20	R	⅔	—	—	—	160	90	½	—	—	—	90	90
Buick 8-50	15½	16	12	12	16	16	16	7	7	7	7	30	10w-20w	R	1¾	4	4	2¼	160	90	3	3	3	3½	160	90
Buick 8-60	18	19	16	15	19	19	19	8	8	8	8	30	10w-20w	R	4	4	4	5	160	90	4½	5⅔	7½	7½	160	90
Buick 8-80, 8-90	23	19	19	19	22	22	22	9	9	9	9	30	10w-20w	R	4	4	4	5¾	160	90	5½	5½	8½	8½	160	90
Cadillac V-8	20	24	24	24	[4]22	22	30	8	8	8	8	30	10w-20w	R	4½	5	4½	6	160	110	6	6	6	6	160	110
Cadillac V-12	18	26	26	26	30	22	30	9	9	9	9	30	10w-20w	R-L	4½	5	4½	6	160	110	6	6	6	6	160	110
Cadillac V-16	28	28	28	28	30	25	30	10	10	10	10	30	10w-20w	R-L	4½	5	4½	6	160	110	6	6	6	6	160	110
Chevrolet	10½	10½	11½	12	14	14	11	5	5	5	5	20-30	10w-20w	L	2½	2½	2½	2	[1]160	[1]90	4½	4½	4	4	[1]160	[1]90
Chrysler 6	15½	15½	16	16	15	15½	15½	6	6	6	6	30-40	10w-20w	L	2¾	[5]3⅜	[5]3½	2	110	80–90	3¼	3¼	4½	4½	160	90-110
Chrysler 8	23	19½	19	16	21	15½	19½	6	6	6	6	30-40	10w-20w	L	[26]3⅜	[5]3⅜	[5]5	3½	110	80–90	4¼	4⅝	4⅝	4⅝	160	110
Chrysler Imperial	23	20	24½	—	21	19½	19½	6	6	8½	—	30-40	10w-20w	L	[26]3⅜	[5]3⅜	[5]5	—	110	80–90	4⅝	4⅝	8¼	—	160	90-110
Chrysler Cust. Imp. 8	23	—	30	26	21	21½	21½	6	8½	8½	8½	30-40	10w-20w	L	[26]5	[5]5	[5]5	5¼	110	80–90	8¼	8¼	8¼	8¼	160	90-110
Continental Beacon	10	10	—	—	10	10	—	4	4	—	—	30	20	L	1½	1½	—	—	160	90	2	2	—	—	160	90
Continental Flyer	—	10	—	—	—	10	—	—	5	—	—	30	20	L	—	1½	—	—	160	110	—	2	—	—	160	110
Continental Ace	—	15	—	—	—	15	—	—	6	—	—	40	20	L	—	[5]2½	—	—	160	[5]90	—	3	—	—	160	90
Cord	—	22	22	22	—	20	20	—	8	8	8	40	20	L	—	[6]10	[6]10	[6]10	—	—	—	[6]10	[6]10	[6]10	—	—
Cunningham	28	29	29	29	24	24	24	10	8	8	8	30	20	C	4	8	8	8	160	110	6	6	6	6	160	110
De Soto 6	20	16	14½	15	16	15½	12	6	6	6	6	30-40	10w-20w	L	[26]2¾	[5]3⅜	[5]3½	2	110	80–90	3¼	3¼	3¼	3¼	160	90-110
De Soto 8	—	—	—	16	—	—	—	—	—	—	6	30-40	10w-20w	L	—	—	—	2½	160	90–110	—	—	—	2½	160	90-110
De Vaux	—	—	15	15	—	—	15	—	—	6	6	40	20	L	—	—	[5]3	2½	160	90	—	—	[7]2½	2	160	90-110
Dodge 6	18	14½	14½	14	15	15	15½	5	5	6	6	30-40	10w-20w	L	2¾	[5]2¾	[5]3½	2	110	90	3¼	3¼	4⅕	4⅕	160	90-110
Dodge 8	—	18½	18	14	—	19½	15½	—	6	6	6	30-40	20-30	L	—	[5]3⅜	[5]3½	2½	110	90	—	4⅕	4⅕	4⅕	160	90-110
Dodge Stand. 6, D.D. 6	—	—	—	12½	—	—	—	—	—	—	6	30	10-20	L	—	—	—	2½	—	—	—	—	—	4⅕	—	—
Dodge 8, Senior 6	—	—	—	16	—	—	—	—	—	—	6	30-40	10-20	L	—	—	—	2	—	—	—	—	—	4⅕	—	—
Dusenberg	32	28	28	28	26	26	26	12	12	12	12	40	30	L	[8]5	[8]4	[8]4	4	See Note 8		4	5	5	5	See	Note 8
du Pont G	—	32	32	26	—	25	25	—	12	12	12	40	30	L	—	6	6	6	—	—	—	6	6	4	—	—
Durant 621	—	—	14	14	—	—	12	—	—	6	6	40	20	L	—	—	[9]2½	2	[9]110	[9]90	—	—	2	2	160	90
Durant 610	—	—	—	14	—	—	—	—	—	—	5	40	20	L	—	—	—	2	—	—	—	—	—	2	—	—
Durant 617	—	—	—	14½	—	—	—	—	—	—	7	40	20	L	—	—	—	4	—	—	—	—	—	3	—	—
Essex 6	—	—	19	18½	—	—	12	—	—	6	5	30	30	L	—	—	[5]3	1¾	110	90	—	—	4	3	110	90
Essex Terraplane 6	18	12	—	—	11½	11½	—	6	6½	—	—	30	10w-20w	L	[5]3[12]	3	—	—	110	90	3	2¾	—	—	110	90
Essex Terraplane 8	—	16	—	—	—	16	—	—	8	—	—	30-40	10-30	L	—	3	—	—	110	80	—	2¾	—	—	110	90
Ford V 8	22	22	22	—	14	14	14	5	5	5	—	40	20	[24]C	2½	2½	2½	—	[25]160	110	2½	2¼	2¼	—	[25]160	110
Ford, B, A	12	12	12	12	14	14	14	5	5	5	5	40	20	L	2½	2½	2½	1	[25]160	110	2¼	2¼	2¼	1½	[25]160	110
Franklin Olympic		Air Cooled			21	21	21	6	6	6	—	40-50	30w-20w	R	3[2]	2	2	—	[10]160	[10]90	3	3	3	—	160	90
Franklin 6		Air Cooled			20	21	20	6	6	6	6	40-50	30w-20w	R	3[2]	4	4	[11]3-4	[10]160	[10]90	3	3	3	3	160	90
Franklin V-12		Air Cooled			28	28	28	10	10	10	—	40-50	30w-20w	R	[7]5[2]	4	4	—	[10]160	[10]90	4	3	3	—	160	90
Graham Std. 6	20	20	20	20	18	18	12½	6	6	6	6	40-50	20w-30w	R	[9]2½	[9]2½	1	1	110	80-90	2½	3	3	3	160	90

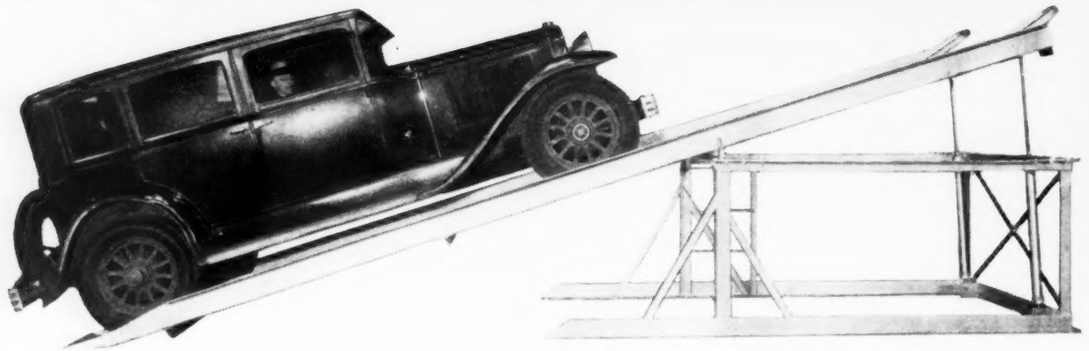
Graham Std. 6	20	20	20	20	18	18	12½	6	6	6	6	40-50	20w-30w	R	[9]2½	[9]2½	1	1	110	80-90	2½	3	4	4	[5]110	[5]80-90
Graham Std. 8	20	20	20	20	18	18	18	6	6	6	6	40-50	20w-30	R	[9]2½	[23]3	[2]3	3	110	80-90	4	4	4	4	[5]110	[5]80-90
Graham Spec. 6	—	—	—	20	—	—	—	—	—	—	6	40-50	20-30	R	—	—	—	3	—	—	—	—	—	4	—	—
Graham Cust. 8	20	20	—	—	18	18	—	6	6	—	—	40-50	20w-30w	R	[23]3	[23]3	—	—	110	80-90	4	4	—	—	[5]110	[5]80-90
Hudson Super 6	—	12	—	—	—	16	—	—	6½	—	—	30-40	10-30	L	—	[5]3½	—	—	110	90	—	4	—	—	110	90
Hudson 8	23	17	17	17	15½	16	16	7	8	8	8	30	10w-20w	L	[5]3[12]	[5]3½	3	1¾	110[12]	90[12]	3	4	4	3	110	90
Hupmobile 417	16	—	—	—	15	—	—	6	—	—	—	30	10w-20w	L	2½	—	—	—	110	80-90	2	—	—	—	—	—
Hupmobile 421, 321, 216	16	16	13	14	15	15¼	15	6	6	6	6	30	10w-20w	L	2½	[5]2½	[13][3][5]	1½	110	80-90	3½	[7]3½	[7]4	[7]3	See Note 7	
Hupmobile 421-J	16	—	—	—	19	—	—	6	—	—	—	30	10w-20w	L	2½	—	—	—	110	80-90	3½	—	—	—	—	—
Hupmobile 422, 322, 222	22	21	21	16	20	20½	20	6	6	6	6	30	10w-20w	L	2½	[5]2½	3	4	110	80-90	4½	[7]4½	[7]4½	[7]4	See Note 7	
Hupmobile 426, 326, 226	24	24	24	20	20	20½	20	9	9	9	9	30	10w-20w	L	3	[5]3	3	4	110	80-90	4½	[7]4½	[7]4½	[7]5	See Note 7	
Hupmobile 225, 237	—	—	—	28	—	—	—	—	—	—	12	30	10w-20w	L	—	—	—	4	110	80-90	—	—	—	[7]6	See Note 7	
Hupmobile 427	—	—	—	—	19	—	—	8	—	—	—	30	10w-20w	L	2½	—	—	—	110	80-90	3½	—	—	—	—	—
LaFayette	19	—	—	—	16	—	—	6	—	—	—	30-40	20	L	—	—	—	—	110	90	—	—	—	—	See Note 14	
La Salle	—	24	26	24	20	22	30	7	8	8	8	40-50	10w-20w	R	2	5	4½	6	160	110	2½	6	6	6	160	90
Lincoln V-12-136	32	32	—	—	26	26	—	13	11	—	—	40	30	L	[5]6	[5]6	—	—	110	90	[7]6	[5]6	—	—	[5]110	[5]90
Lincoln V-12-145	32	34	34	—	26	26	28	13	12	12	—	40	30	L	[5]6	[5]6	[5]6	—	110	90	[7]6½	[5]6½	[5]6½	—	[5]110	[5]90
Lincoln V-8	—	—	34	32	—	—	28	—	—	10	10	40	30	L	—	—	6	6	110	90	—	—	6½	6½	[5]110	[5]90
Marmon 16	—	33	34	32	—	29	29	—	10	10	10	40	30	L	—	5	5	5	90	90	—	[7]4½	[7]4½	[7]4½	See Note 7	
Marmon 8-125, 88	—	—	28	28	—	—	20	—	—	10	10	40	20-30	L	—	—	3	3	90	90	—	—	[7]4½	[7]4½	See Note 7	
Marmon 70, 69	—	—	—	16	—	—	—	—	—	—	6	40	20-30	L	—	—	—	1½	90	90	—	—	—	[7]2	See Note 7	
Nash 20 and 60 Series	17½	19	15	12	19	15	13	7	7	6	5	30-40	20	L	[12]3	[2]3	[2]3	2	110	90	6	[7]6	6	6	See Note 14	
Nash 1130	—	16	—	—	—	15	—	—	7	—	—	30-40	20	L	—	[2]3	—	—	110	90	—	[7]6	—	—	See Note 14	
Nash 70 Series	—	17	17	13	—	13	—	—	7	7	7	30-40	20	L	—	[2]3	[2]3	2	110	90	—	[7]6	[7]6	6	See Note 14	
Nash 80 Series	21	21	21	16	19	20	20	8	8	8	8	30-40	20	C	[12]3	[8]3	[2]3	2	110	90	6	[7]4½	[7]6	6	See Note 14	
Nash 90 Series	22	22	22	22	19	20	20	10	10	10	10	30-40	20	C	[12]3	[2]3	[2]3	3	110	90	12	[7]6	[7]7	7	See Note 14	
Oakland	—	—	—	25	—	—	—	—	—	—	7	30-40	10-20	R	—	—	—	2.6	160	90	—	—	—	3	160	90
Oldsmobile 6	15	17	16¼	13	15	16	16	6	6	6	6	30	10w-20w	L	2	2	[15]2	3	160	90	[7]2½	[7]2½	[7]2½	2½	[7]110	[7]80-90
Oldsmobile 8	19	19	16¼	—	18	16	16	7	7	7	—	30	10w-20w	L	2	2	[15]2	—	160	90	[7]2½	[7]2½	[7]2½	—	[7]110	[7]80-90
Packard Std. 8	20	20	20	20	25	20	25	8	8	8	8	30-40	10w-20w	L	4½	4½[1]	4	4	160	90	4	[7]6	[7]6	[7]6	See Note 16	
Packard Super 8, Cust. 8	20	20	26	25	25	25	25	10	10	10	10	30-40	10w-20w	L	4½	4½	4	4	150	90	6	[7]6	[7]7	[7]8	See Note 16	
Packard Twin 6	40	40	40	—	32	32	25	10	10	8	—	30-40	10w-20w	L	4½	4½	5	—	160	90	6	[7]6	[7]4	—	See Note 16	
Packard Light 8	—	—	19	—	—	—	20	—	—	8	—	30-50	10w-20w	L	—	—	5	—	160	90	—	—	[7]4	—	See Note 16	
Peerless Master 8	—	—	24	24	—	—	24	—	—	10	10	30	20	L	—	—	5	5	160	90	—	—	3	3	160	90-110
Peerless Custom 8	—	—	24	24	—	—	24	—	—	10	10	30	20	L	—	—	4	4	160	90	—	—	6	6	160	90-110
Peerless Std. 8	—	—	—	14	—	—	—	—	—	—	8	30	20	R	—	—	—	2	160	90	—	—	—	4	160	90-110
Pierce Arrow 836A, 54	28	25	25	26	25	27	22	9	9	9	9	30	10w-20w	L	[5]4½	[5]4½[18]	[25]5	4	110-90	90	6	[17]7	[17]6	[17]6	See Note 17	

NOTES:

1. Where viscosity range is shown use heavier grade for high speed driving, or if in winter column for milder climates. In severe cold weather it may be necessary to use still lighter grade or dilute lightest grade shown in accordance with car manufacturers' recommendations.
2. Free wheeling unit filled separately. Takes one pint 110 S.A.E. vis. in summer and 90 S.A.E. vis. in winter.
3. Larger volume is for dual ratio axle which takes 160 S.A.E. vis. Extreme Pressure Lubricant.
4. Fleetwood model takes 30 gallons.
5. Takes Free Wheeling Lubricant.
6. Differential and transmission combined take 10 pints of Extreme Pressure Lubricant.
7. Takes Extreme Pressure Lubricant.
8. Free wheeling unit filled separately; takes ¾ pint; manufacturer insists on service only at authorized station.
9. Free wheeling unit filled separately; takes ½ pint.
10. Free wheeling unit filled separately; takes one pint 160 summer, FW110 winter, FW90 sub-zero weather.
11. Four forward speed transmission takes 4 pints.
12. Free wheeling dropped in 1934 models.
13. Fill through free wheel unit fill hole but check height in transmission after filling.
14. Nash recommends only Nash Special E. P. Lubricant.
15. 1932 models take Extreme Pressure Lubricant.
16. Packard specifies own.
17. Use lead base or similar EP Lubricant approved by Gleason Works, Rochester, N. Y.
18. Free wheel unit lubricated separately, holds 3½ pints; use 110 summer, 90 winter.
19. Right side on 1932 V-8.
20. Free wheel unit takes ¼ pint FW 110 summer; FW90 winter.
21. Four forward speed transmission takes 6 pints.
22. Free wheel unit takes ¾ pint.
23. Free wheel unit takes 1½ pints.
24. R in 1932 models.
25. S.A.E. 250 recommended for 1932 models.
26. Non-corrosive oils required in "overdrive" units.

(Continued on Page 80)

UNIVERSAL



Absolutely Safe! Lower Original Cost

No Installation or Operation Expense — Portable

It's here . . . what the oil industry has long wanted and needed . . . the New and Revolutionary UNIVERSAL . . . that offers all lift ADVANTAGES without lift costs. No expensive installation costs . . . no operating or upkeep expense. Just anchor to the ground and you are ready for business. Can be quickly and easily moved. Designed and built according to Underwriter's Safety Standards . . . no danger of collapsing . . . tested to support a weight capacity of over 25,000 pounds. Get the complete details concerning the UNIVERSAL. Learn how it can add to your business and profits.

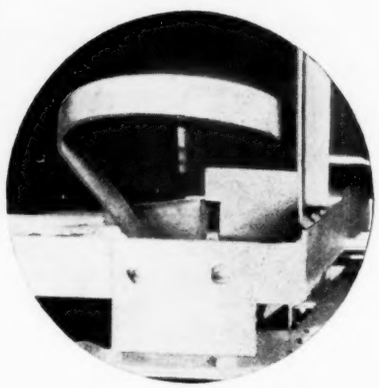
Roll up GREATER Profits With The UALCO

The Universal costs less than the ordinary conventional type lift. There is absolutely no installation expense. As cars roll UP and ON the UNIVERSAL your profits roll up. Thoroughly tested and proved. Perfectly balanced. Car is securely locked when on the UNIVERSAL. Don't buy a lift of any type, make or price until you have investigated the UNIVERSAL.

Safety Chuck automatically prevents backward movement of car until Safety catch is manually released.

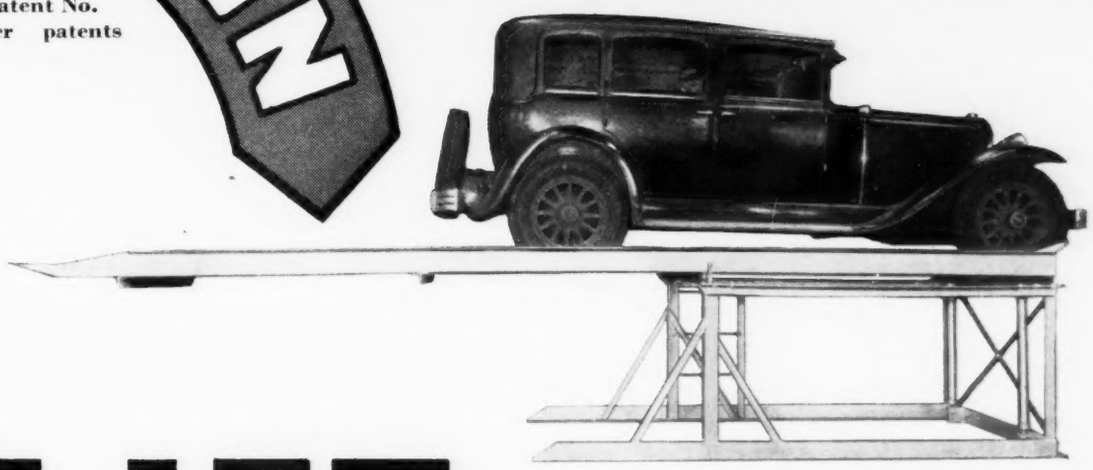
Cuts Costs . . . . . Builds Trade!

The UNIVERSAL eliminates all service costs and expense. Permits quicker servicing of cars . . . which means a bigger trade and better profits for you.



UP and ON Auto Lift

The UNIVERSAL is fully protected by Patent No. 1890796; other patents pending.



LIFT advantages Without LIFT COSTS

Automatic Safety catch holds car in a horizontal position until manually released.

Just imagine the economy and efficiency of the UNIVERSAL. No upkeep cost . . . no installation expense. Every car provides its own power . . . drive UP and ON . . . that's all there is to it. Quick, convenient, economical . . . ABSOLUTELY SAFE. Now every service station and garage can afford a lift . . . a UNIVERSAL. Fill out and mail coupon NOW for complete FREE details of the New and Revolutionary UNIVERSAL.

UNIVERSAL *Auto Lift* COMPANY

AURORA, ILLINOIS

WRITE TODAY FOR DETAILS

Universal Auto Lift Co.
P. O. Box 292
Aurora, Ill.

Send complete details about the new Ualco Lift to—

Firm.....

Address.....

Signed..... Title.....

PASSENGER CAR CAPACITY CHART (Continued from Page 77)

Make & Model	Cooling System (Quarts)				Gas Tank (Gallons)			Crank Case (Quarts)				S.A.E. Vis. Oil		Oil Fill Pipe	Transmission (Pints)				Transmission S.A.E. Vis. 1934-3-2-1		Differential (Pints)				Differential S.A.E. Vis. 1934-3-2-1	
	1934	1933	1932	1931	1934	1933	1932	1934	1933	1932	1931	Sum.	Win.		1934	1933	1932	1931	Sum.	Win.	1934	1933	1932	1931	Sum.	Win.
Pierce Arrow 1236A, 51, 52	40	38	38	—	25	27	30	12	10	10	—	30	10w-20w	C	[5]4½	[5]4½[18]	[25]	—	110-9	90	6	[17]7	[7]16	—	See N	ote 17
Pierce Arrow 1242A, 47.	40	38	—	26½	25	27	—	12	10	—	9	30	10w-20w	C	[5]4½	[5]4½[18]	—	4	110-9	90	6	[17]7	—	[17]6	See N	ote 17
Plymouth 6, Fltg. Power 4	14	13	15	14½	11	11	12	5	5	6	6	30-40	10w-20w	L	[12]2¾	[5]2¾	[5]3½	3¾	110	90	3¼	3¼	3¼	3¼	160	90–110
Plymouth	—	—	—	10	—	—	—	—	—	—	6	30-40	10-20	L	—	—	—	2	160	110	—	—	—	3½	160	110
Pontiac 8	15	15	25	—	18	18	20	7	7	7	—	30-20	10w	L	2½	2½	[5]1½[9]	—	160	90	4½	4½	3	—	160	90
Pontiac 6	—	—	14	14	—	—	15	—	—	6	6	30	20	L	—	—	[5]1½[9]	2	110	90	—	—	3	3	160	90
Reo S6, 1-21, 1-25	20	20	17	17	20	21	21	6	6	6	6	30	20	L	[7]3½	[5]2	[7]3	[7]3	110	90	3	3	5	5	160	90-110
Reo Royale 8,-31,-35	25	23	24	24	24	24	24	8	8	8	8	30	20	L	[7]3½	[5]2	[7]3	[7]3	110	90	3	3	5	5	160	90-110
Reo 8-21, 8-25, 30	—	—	17	23	—	—	21	—	—	8	8	40	30	L	—	—	[7]3	[7]3	—	—	—	—	5	5	160	90-110
Rockne 6, 6-65	—	12	12	—	—	12	12	—	5	6	—	30-40	10-20	L	—	[5]2¾	[5]2¾	—	110	80–90	—	2½	2½	—	110	90
Rockne 6-75	—	—	14	—	—	—	14	—	—	7	—	30-40	10-20	L	—	—	[5]2¾	—	110	80–90	—	—	2¾	—	110	90
Studebaker 6	—	14	12	12½	—	15	14	—	6	7	7	30-40	10-20	L	—	[5]3¼	[5]3¼	1¼	110	80–90	—	4	4	4	110	90
Studebaker Dict. 6	16	—	—	—	14	—	—	5	—	—	—	30-40	10w-20w	L	[5]2¾	—	—	—	110	80–90	2½	—	—	—	110	90
Studebaker Dict. 8	—	—	14	18	—	—	14	—	—	6½	6½	30-40	10-20	L	—	[5]—	[5]3¼	4	110	90–90	—	—	4	4	110	90
Studebaker Com. 8	18	16	16	19	17	14	17	6½	6½	6½	6½	30-40	10w-20w	L	[5]2¾	[5]3¼	[5]3¼	4	110	80–90	2½	4	5	5	110	90
Studebaker Pres. 8	18	18	21	21	17	17	20	6½	6½	8	8	30-40	10w-20w	L	[5]3½	[5]3¼	[5]4	5	110	80–90	4	5	7	7	110	90
Studebaker Pres. Spd'w'y	—	23	—	—	—	20	—	—	8	—	—	30-40	10-20	L	—	[5]4	—	—	110	80–90	—	7	—	—	110	90
Stutz LAA, LA	24	24	24	24	20	20	18	9	9	9	9	50	30	L	6	6	6	6	160	110	4	4	3	3	160	110
Stutz DV-32, SV-16	28	28	28	28	20	20	20	12	12	12	12	50	30	L	6	6	6	6	160	110	4	4	3	4	160	110
Willys 77	9	9	—	—	8	8	—	4	4	—	—	30	20	R	1	1	—	—	160	110	1	1	—	—	160	110
Willys 99	—	13½	—	—	—	13	—	—	7	—	—	30	20	L	—	[20]1¾	—	—	[5]110	[5]90	—	3	—	—	160	110
Willys-Overland 6, 97	—	—	13½	13½	—	—	13	—	—	7	7	30	10-20	L	—	—	[22]1½	1½	[5]110	[5]90	—	—	3	3	160	110
Willys-Overland 8-90	—	13½	19½	20	—	13	16	—	7	8	8	30	10-20	L	—	[20]2½	[22]2	2	[5]110	[5]90	—	3	4	4	160	110
Willys Knight 95 66B	—	—	15½	—	—	—	13	—	—	8	—	30	10-20	L	—	—	[22]1½	—	[5]110	[5]90	—	—	3	—	160	110
Willys Knight 66E, 66D	—	20	17½	17½	—	16	16	—	8	8	8	30	10-20	L	—	[2]3	[22]2	2	[5]110	[5]90	—	4½	4½	4	160	110
Windsor 6-69	—	—	—	12	—	—	—	—	—	—	6	30	20	R	—	—	—	1½	—	—	—	—	—	2	—	—
Windsor 6-72	—	—	—	14	—	—	—	—	—	—	5	30	20	L	—	—	—	[21]1½-6	—	—	—	—	—	2	—	—
Windsor 8-92	—	—	—	16	—	—	—	—	—	—	5	30	20	L	—	—	—	4	—	—	—	—	—	2	—	—

NOTES:

1. Where viscosity range is shown use heavier grade for high speed driving, or if in winter column for milder climates. In severe cold weather it may be necessary to use still lighter grade or dilute lightest grade shown in accordance with car manufacturers' recommendations.
2. Free wheeling unit filled separately. Takes one pint 110 S.A.E. vis. in summer and 90 S.A.E. vis. in winter.
3. Larger volume is for dual ratio axle which takes 160 S.A.E. vis. Extreme Pressure Lubricant.
4. Fleetwood model takes 30 gallons.
5. Takes Free Wheeling Lubricant.
6. Differential and transmission combined take 10 pints of Extreme Pressure Lubricant.
7. Takes Extreme Pressure Lubricant.
8. Free wheeling unit filled separately; takes ¾ pint; manufacturer insists on service only at authorized station.
9. Free wheeling unit filled separately; takes ½ pint.
10. Free wheeling unit filled separately; takes one pint 160 summer, FW110 winter, FW90 sub-zero weather.
11. Four forward speed transmission takes 4 pints.
12. Free wheeling dropped in 1934 models.
13. Fill through free wheel unit fill hole but check height in transmission after filling.
14. Nash recommends only Nash Special E. P. Lubricant.
15. 1932 models take Extreme Pressure Lubricant.
16. Packard specifies own.
17. Use lead base or similar EP Lubricant approved by Gleason Works, Rochester, N. Y.
18. Free wheel unit lubricated separately, holds 3½ pints; use 110 summer, 90 winter.
19. Right side on 1932 V-8.
20. Free wheel unit takes ¼ pint FW 110 summer; FW90 winter.
21. Four forward speed transmission takes 6 pints.
22. Free wheel unit takes ¾ pint.
23. Free wheel unit takes 1½ pints.
24. R in 1932 models.
25. S.A.E. 250 recommended for 1932 models.
26. Non-corrosive oils required in "overdrive" units.

ADVERTISING PAGES REMOVED

Refinery --- Tank Wagon Markets

Uncertainty Over Washington Developments Keeps Oil Markets Unsettled

CLEVELAND, Jan. 29

OIL markets were unsteady throughout the week ended Jan. 27 due largely to the highly unsettled state of affairs at Washington. Buyers showed little interest in making new commitments. Gasoline prices rallied slightly in some refinery districts on the news that formation of the Gasoline Pool was nearing completion. The response of prices, however, was not what had been expected generally, and demand from the jobbing trade was far from coming up to expectations.

Most of the demand for gasoline last week was coming from resale agents. And since jobbers were not buying, resale agents were unable to give shipping instruction, to refiners and the latter, particularly in the Mid-Continent, were in a quandary as to what to do about their mounting gasoline stocks.

Mid-Continent refiners with contracts said instructions from this class of trade had increased from 25 to 100 per cent. This was taken as an indication that jobbers were willing to take out gasoline on their contracts but still were not interested in augmenting their purchases in the open market until the Washington picture is more clearly defined.

Gasoline prices pursued a slow but steady upward climb in the Chicago market. Buying in the open market was fairly active at the beginning of the week and this took a good bit of the distress gasoline out of the market. Demand slowed down considerably as the week progressed but gains of 0.25 cent in prices were sustained generally. Resale agents reported jobbers were still willing to buy gasoline at current prices for future shipment but interest in spot shipments died down.

Retail price cutting increased slightly in the Pacific Coast market but on the whole the situation remained fairly stable.

Gasoline was steady in most districts along the Atlantic seaboard. Philadelphia tank car prices were down 0.25 cent due to competition from the neighboring markets, but elsewhere prices held their ground fairly well. New England markets marked time.

Mild weather throughout last week continued to hamper the demand for light fuel oils. Prices eased slightly in the Mid-Continent and were barely holding their own in other refinery districts. There was some pickup in industrial demand for heavy fuels but it was not sufficient to affect prices.

The recent activity in lubricating oil markets quieted down considerably. Pennsylvania prices, however, were steady. Mid-Continent bright stocks were up 1.5 cents a gallon.

Cargo prices for gasoline at the Gulf turned about face on increased export activity. Recent losses were turned into substantial gains.

Chicago Gasoline Prices Climb Upward

Staff Special

CHICAGO, Jan. 27

GASOLINE prices pursued a slow but steady upward climb in the Chicago market in the first week's trading following the signing of the pooling and marketing agreements by Oil Administrator Ickes.

Despite the signing of these agreements, the oil markets continued considerably unsettled. Several reasons were advanced for this condition, the chief one being that the signatories of the original two agreements might not approve the reservations of Secretary Ickes and thus throw the whole matter back where it was prior to his signing them.

Another factor keeping the market unsettled was that the standard forms of contracts which accompanied the two agreements and which were the object of much interest to traders, were not very widely distributed until Jan. 25 or later.

Buying in the open tank car gasoline market started off the week quite actively, but slowed down considerably as the week progressed. Movement of gasoline to contract jobbers showed considerable improvement, it was reported. Carload marketers were reported to have done considerable purchasing of gasoline, both for immediate and deferred shipment, particularly during the early days of the week.

Summary of Group 3 Quotations for U. S. Motor Gasoline
In Effect January 29, 1934

	59 Octane and Below	60-64 Octane No.	65 Octane and Above
Okla.	3.875-4.125	4.875-5.125	5.125-5.375
Kans.	3.875-4.00	4.875-5.125	5.125-5.25
N. Tex.	3.875-4.00	4.625-4.875	4.875-5.00
W. Tex.	3.875-4.00	4.625-4.875	4.875-5.00
E. Tex.	3.875-4.00	4.625-4.875	4.875-5.00
La.-Ark.	3.875-4.00	4.625-4.875	4.875-5.00

Prices are those quoted on the basis of f.o.b. Group 3 by refiners in the districts designated.

The marketers generally said their sales to jobbers had not been nearly as heavy as they had expected, although they had received numerous inquiries for gasoline. Several marketers reported that jobbers were willing to buy gasoline for future shipment at present price levels, but they were not particularly interested in immediate shipments.

Tank car prices of gasoline moved upward 0.25 to 0.375 cent during the week, despite the disappointing movement in the spot market. Quotations on U. S. Motor, 59 octane and below, generally were at 3.875 to 4 cents on Jan. 27 compared to a spread of 3.625 to 3.75 cents on Jan. 22.

Buyers generally reported that refiners were not pushing sales at present, preferring to hold for higher prices and this kept the market on an upward trend.

Kerosine showed no particular amount of activity, according to most traders. However, several said they were beginning to receive more calls for this product. Prices generally showed little change, with the 41-43 w.w. grade quoted at 3.25 cents and up.

Heating oil demand continued to be hampered by mild weather, although prices generally remained steady.

Other products showed little change.

Mid-Continent Refinery Markets

Orders Fair; Shipping Instructions Slow

Staff Special
TULSA, Jan. 27

THE Mid-Continent gasoline market was kept unsettled the past week due to the activities in Washington over the Pooling and Marketing Agreements, but generally speaking refiners had little to complain about as far as orders were concerned.

The only complaint apparently was that some of the refiners who had sold to resellers were not getting shipping instructions, and were in a quandary as to what to do about their mounting gasoline stocks.

Refiners with contracts said instructions had increased from 25 to 100 per cent in the course of the week. From these reports it would indicate jobbers were content to take gasoline out on their contracts but still were not interested in augmenting their purchases in the open market until they knew more definitely the outcome of the conferences in Washington.

The middle octane U. S. Motor gasoline, being the most actively moved product on contracts, became scarce or extremely closely held before the end of the week. Refiners in Kansas reported they were completely sold up, and in some instances from three to five days behind with shipments. In Oklahoma there were a few spots where the material could be bought in odd car lots but for the most part the gasoline was scarce and prices showed a definite upward trend toward the end of the week.

East Texas continued to dominate the low octane U. S. Motor gasoline market. Marketers and brokers jumped into that market soon after Mr. Ickes had approved the two agreements and placed a fair volume of orders. The jobbers, however, did not respond as readily to the announcements as the resellers had anticipated, and the result at the end of the week was that the East Texas refiners had the orders but not the necessary shipping instructions. They were in hopes Jan. 27, however, that developments over the week end in Washington would be sufficiently optimistic to cause increased buying.

Approximately 150 cars of 400 e.p. gasoline were bought in East Texas early in the week but as far as could be learned that was the extent of export or coastwise buying for the week.

Chicago Tank Car Market

Following prices are in cents per gallon, except fuel oil in barrels, in tank car lots, representing majority of sales to jobbers on Group 3 freight basis, although shipments may originate in other refining districts, such as North, West and East Texas, Louisiana, Arkansas, Indiana, Illinois, Kentucky, etc. Prices do not include state or federal taxes levied on some products.

	Prices Jan. 29	Prices Jan. 22	Prices Jan. 15
50-52, 437 e.p. naphtha	Discontinued	Discontinued	3.50 – 3.625
U. S. Motor Gasoline, *by octane numbers:			
59 and below	3.875– 4.00	3.625– 3.75	3.625– 3.875
60-64	4.625– 4.875	4.375– 4.75	4.375– 4.625
65 and above	4.875– 5.125	4.625– 4.875	4.625– 5.00
60-62, 400 e.p. gasoline	4.00 – 4.125	3.75 – 3.875	3.75 – 3.875
64-66, 375 e.p. gasoline	4.75 – 4.875	4.625– 4.75	4.625– 4.75
68-70, 350-360 e.p. gasoline	5.00 – 5.125	4.875– 5.00	5.00 – 5.125
Aviation Gasoline, below 73 octane number	5.375– 5.625	5.375– 5.625	5.375– 5.625
41-43 water white kerosine	3.25 – 3.375	3.25 – 3.375	3.25 – 3.50
42-44 water white kerosine	3.375– 3.50	3.375– 3.50	3.375– 3.625

*Octane numbers are determined by C.F.R. motor method (ASTM D 357-33T).

	Jan. 29		Jan. 22	
†Fuel and Gas Oils:	Domestic	Industrial	Domestic	Industrial
No. 1, white	3.125– 3.25	.....	3.125– 3.25	.....
No. 1, straw	3.00 – 3.125	.....	3.00 – 3.125	.....
No. 2, dark	3.00	.....	3.00	.....
No. 2, straw	3.125– 3.25	.....	3.125– 3.25	.....
No. 3	2.875– 3.00	.....	2.875– 3.00	.....
No. 4	$0.975–$1.00	$0.90 –$0.975	$0.975–$1.00	$0.90 –$0.975
U.G.I. gas oil	.....	1.875– 2.00	.....	1.875– 2.00
No. 5	$0.60 –$0.625	$0.525–$0.60	$0.60 –$0.625	$0.525–$0.60
No. 6	.....	$0.35 –$0.40	.....	$0.35 –$0.40

†Fuel and Gas Oils classifications taken from U. S. Bureau of Standards, Department of Commerce.

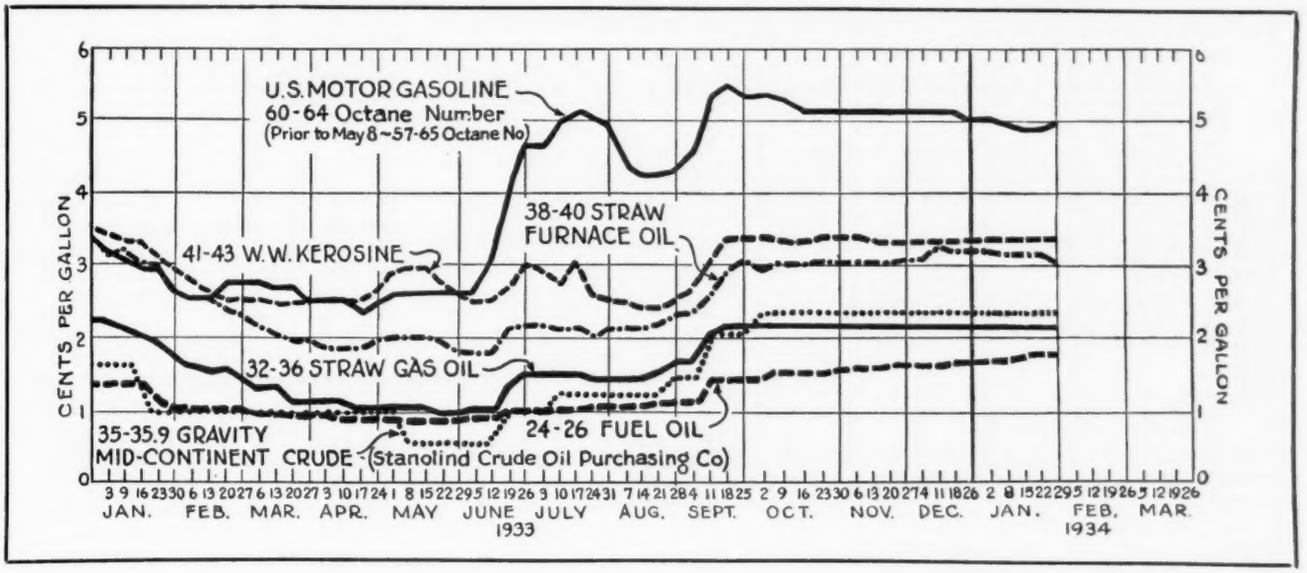
Naphtha and Solvent

(Prices are in cents per gallon, in tank car lots, as quoted by Chicago sellers)

	F.O.B. Group 3 Basis		
	Jan. 29	Jan. 22	Jan. 15
Stoddard Solvent	6.375	6.00	6.125
V. M. & P. Naphtha	6.875	6.50	6.625
Cleaners Naphtha	6.875	6.50	6.625
Oleum Spirits	5.875	5.50	5.625
Rubber Solvent	6.875	6.50	6.625
Lacquer Diluent	7.875	7.50	7.625

Barometer of Mid-Continent Refinery Market—Week Ended January 26

Charted Course of Prices of Crude and Principal Refined Products, Week by Week


U.S. MOTOR GASOLINE
60-64 Octane Number
(Prior to May 8 ~ 57-65 Octane No)
38-40 STRAW
FURNACE OIL
41-43 W.W. KEROSINE
32-36 STRAW GAS OIL
24-26 FUEL OIL
35-35.9 GRAVITY
MID-CONTINENT CRUDE (Stanolind Crude Oil Purchasing Co)
CENTS PER GALLON
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC. JAN. FEB. MAR.
1933
1934

A few refiners continued to ship on previously placed coastwise orders but for the most part the district's refiners would like to have some shipping instructions.

The reaction of the natural gasoline market towards the approval of the Pooling and Marketing Agreements was similar to that of the refined market, although at the end of the week the general situation on natural seemed to be much healthier than was the case on the refined products. While the price of Grade 26-70 was exceptionally slow in responding to the improved condition of the general market, when it finally did reach the higher level of 2.5, much of the distress gasoline which appeared last week had been well cleaned up.

Approximately 250 cars of Grade 26-70 were purchased late Saturday. While most of this buying was at 2.375 cents the general effect was to pave the way for a slightly better price and a much tighter market situation. When buyers were unable to obtain sufficient quantities of gasoline for Gulf shipment, Oklahoma refiners began sloughing off the gasoline jobbers and refiners were not absorbing. This export buying coupled with the increased speculative buying on the part of refiners was reflected in an advance of 0.125 cent on Grade 26-70.

The stabilized grades of natural also were firming up. Manufacturers late in the week reported they were having less difficulty getting the full percentage over Grade 26-70 on the low vapor pressure grades. It was reported that another cargo of "stabilized" had been sold either Saturday or early this week, but official confirmation was lacking.

Heating oils also seemed to have picked up somewhat, although the weather in most of the consuming areas was mild most of the week. In spite of the continued light demand there was less of the furnace oil offered in the open market and much of the oil at shaded prices had disappeared. The prime white grade had gotten back to the old 3.25-cent level and the straw color material was selling at 3.125 cents. Gas oil was steady.

Reports of slacking up on purchases of fuel oil in some districts has had little or no tangible effect on prices of the heavier oils. Quotations for the most part were holding and practically no shading was encountered.

Mid-Continent manufacturers of bright stock advanced their asking prices of these oils 1.5 cent the middle of the week. Movement at the higher levels was negligible, but stocks of these oils were fairly low. The neutrals were holding their ground well, with a few spot sales at the advanced levels. The steam refined stocks were scarcer and prices were advanced late in the week. Wax movement was good.

ROCHESTER, N. Y.—Kellogg Mfg. Co. announces that beginning Jan. 15, H. O. Holland will be its representative in New England with headquarters in Boston.

Wax Markets

Demand Quiet

NEW YORK, Jan. 27.—Wax markets at New York and New Orleans for the most part were quiet during the week ended Jan. 27. The principal product in demand was white crude scale, but the call for this was comparatively slow. The majority of white scale sales were at 4 cents per pound with occasional sales reported at 3.875 cents.

The fully refined grades were not in demand and prices generally were unchanged.

Jobber Sponsors Broadcasts

MADISON, Wis.—Broadcasts of home basketball games of the University of Wisconsin are being sponsored by Tony Fiore, Fiore Coal & Oil Co., here. Mr. Fiore also is a regional officer of the Wisconsin Petroleum Association and has been active in code work.

Prices A Year Ago

Jan. 30, 1933

	Oklahoma	Penna.
58-62 U. S. Motor (57-65 Octane No. in Okla.)	2.50-2.75	5.00-5.25
Grade 26-70, Natural Gasoline	2.00	.....
Kerosine (Okla. 41-53; Pa. 47 w.w.)	2.875-3.00	4.75-5.00
Fuel oil (Okla. 24-26; Pa. 36-40)	$0.425-$0.475	*3.375-3.625
Crude (Okla. 35-35.9)	$0.42	$1.42
Chicago tank wagon (including 3c state, 1c federal tax)		14.10c

*Nominal

California Refinery Market

Retail Market Fairly Steady

LOS ANGELES, Jan. 26

GASOLINE prices in the Pacific Coast domestic market remained stable during the past week. Many observers, however, doubted whether stability could be maintained for any period under existing conditions, with continued piling up of refinery stocks and diminished consumer demand.

With the exception of The Texas Co., in the Los Angeles Basin area major companies retailed third-grade brands at 16.5 cents a gallon, standard brands at 19 cents and Ethyl at 21 cents, inclusive of 4 cents tax. The Texas Co. still sold its third-grade product at 16 cents, but otherwise held to established prices.

Independent competitive brands generally sold at 16 cents a gallon. Consistent with its extensive advertising campaign, Wilshire Oil Co. sold at 16.5 cents what it claimed to be a first-grade product, equal to major company standard brands. In a few instances gasoline was offered as low as 13.5 cents a gallon. As the week closed, an increasing number of 14.5-cent signs appeared.

Motor fuel, a blend of gasoline, kerosine and natural gasoline, was occasionally offered at 13 cents a gallon. It had an end point of from 440 to 480 and no desirable features, except price.

Tank-truck-and-trailer prices in the Basin area were not so firmly held as during recent weeks and gave some evidence of an impending break. Although the established delivered price was 13.5 cents, with 0.5 cent margin to meet competition, little attempt was made to hold to this level where the purchaser agreed to post 16 cents as the retail price. Considerable quantities were available at prices that netted the refinery 7.25 cents a gallon, after payment of tax. For shipment to points outside the state, quotations in many instances were at least 0.5 cent less. This notwithstanding the continued removal from the market of large quantities of distress gasoline at 12 cents a gallon.

Fuel oils were easy although no changes were made in prevailing prices, which ranged from 50 to 60 cents a barrel, f.o.b. San Joaquin Valley points. Distress fuel oil, produced by a small refinery operating chiefly on hot oil from Huntington Beach and Signal Hill, was being offered at 35 cents a barrel. Notwithstanding this competition, small spot sales were reported at 57.5 cents for delivery in the Long Beach area.

Pacific Coast export markets were inactive. Increase of 1 cent a gallon, effective Feb. 1, in the domestic price of kerosine imposed a further handicap on export sales of that product, which were already confronted with lessened demand and keen competitive prices in the Oriental markets. No change was reported in quotations on cased goods, although an advance was scheduled for Feb. 1 on account of increased cost of tin cases.

Quotations on other California petroleum products showed no important changes.

Canfield Salesmen Meet

CLEVELAND, Jan. 27.—The annual meeting of Canfield Oil Co. salesmen will be held in Cleveland beginning Feb. 5. Outside salesmen will be called in for the 3-day meeting.

Eastern Domestic Markets

Philadelphia Gasoline Prices Lower

Staff Special

NEW YORK, Jan. 27

GASOLINE markets along the eastern seaboard were steady during the week ended Jan. 27. Despite slight revisions downward in tank car prices at Philadelphia, feeling throughout the markets were optimistic. Retail markets developed upward tendencies early in the week when it was announced that Standard Oil Co. of New York would advance prices 0.5 cent per gallon Jan. 25. This scheduled order, however, was later rescinded.

The matter of standard contract forms continued to be a subject for discussion and revision throughout the week in Washington. The question of whether advertising constitutes an added element of cost of gasoline also found its way into the general fabric of the oil news.

At New York harbor the price situation was generally unchanged throughout the week. Buying was largely of a routine nature with no special features noted. The three grades of gasoline offered remained priced at 5.5, 5.75 and 6 cents. The same level of prices prevailed in the Baltimore market as at New York harbor.

Competition from the neighboring markets brought about a reduction of 0.25 cent in the Philadelphia gasoline market. Prior to the recent reduction in prices this market was generally quoted at 6 and 6.25 cents for the low and high octane grades, respectively.

Gasoline markets in New England marked time throughout the week. In fact, trading was quiet at unchanged prices for all products.

The postings for bunker oil, grade C, and diesel oil remained unchanged at $1.20 and $1.95, respectively, in the key markets. However, reports frequently heard were to the effect that increased costs and the limited supply of these oils at the Gulf were tending to force prices higher.

The cargo market for gasoline at the Gulf was more active. Two cargoes of 64-66, 375 end point gasoline were purchased by a European buyer at 5.25 cents for February and March lifting. Following this sale, a French buyer inquired for approximately 60,000 barrels of 64-66, 375 end point and 15,000 barrels of U. S. Motor Gasoline for February lifting. As prospects of a better domestic market appeared bright for the new future, several suppliers withdrew offerings from the export market. Quotations to the domestic trade were advanced 0.125 to 0.25 cent.

Kerosine was offered at 4.25 cents, a reduction of 0.25 cent. Light heating and heavy fuel oils continued scarce with prices steady. Panuco crude was 5 cents higher at $0.80 per barrel.

Pennsylvania Markets

Light Oils Easy

CLEVELAND, Jan. 29.—The western Pennsylvania refinery market was unsettled throughout the week of Jan. 22 to 27. Volume of light oil trading was disappointing to refiners following the bullish news from Washington regarding the gasoline pool, and prices were easy. There was a temporary lull in lubricating oil demand but prices held their ground well.

Jobbers continued to pursue their

policy of recent weeks of taking in only enough gasoline to meet their current requirements. A good many of them had room in storage to take in considerable quantities, but apparently they were content to bide their time in the belief that there would be ample time to get under cover with supplies before the gasoline pool takes an active part in the market. Many of them were of the belief that gasoline prices would move lower before the pool began operating. Some of them indicated a willingness to fill storage at prices 0.375 to 0.5 cent under the current market.

Refiners, however, apparently were equally as convinced that higher prices were not far off, and they were content to hold their gasoline. Ordinary U. S. Motor was the only grade of which there was any considerable surplus. There was some shading of 5 cents for this grade. Pennsylvania gasolines with high octane rating have a ready market and demand, even in the winter months, is sufficient to keep the bulk of current production moving. There is at this season, however, less high octane gasoline brought west from the Atlantic seaboard.

Kerosine prices were down 0.25 cent in a slow market. Demand for Pennsylvania kerosine has been disappointing thus far this winter due largely to increased competition from the eastern seaboard. And with less kerosine-distillate being cracked, the supply of finished oil has mounted steadily. Refiners not usually suppliers of kerosine have had the oil for sale all winter.

The Bradford district was the exception to the general market on kerosine. Refiners in that district reported good movement to western New York and were somewhat distressed over the depressed market which ruled the rest —the largest part—of the field.

Fuel oil also was soft. Industrial demand was not sufficient to absorb the surplus which resulted from curtailed cracking operations and the oil was offered in large quantities. Prices were down 0.25 cent a gallon.

There was considerable speculation over the course of the lubricating oil market would pursue in the near future. The statistical position of the market pointed to higher prices in February. The production of many a refiner until March 1 is completely sold.

At the same time there is an important faction in the market that believes at further rise in Pennsylvania prices at this time would be ruinous to the Pennsylvania market. There have been advances in prices to dealers and distributors for the first time in many months, and already some buyers are reported to be turning to the cheaper southwestern oils. These oils have been offered at low prices under contract over the balance of the year.

A Complete Line of 100% Pure Pennsylvania Petroleum Products

100% PENNA. MOTOR OILS

BRIGHT STOCKS

LONG RESIDUUMS

NEUTRALS

CYLINDER STOCKS

GASOLINE

NAPHTHA

CLEANING SOLVENTS

KEROSENE

FUEL OIL

PARAFFINE WAXES

PETROLATUM (All Colors from Snow-White to Green)

We are prepared to furnish the new 10-W and 20-W specifications.

We ship to you direct from our two modern refineries which are aided by sixty years refining experience

PENNSYLVANIA

REFINING COMPANY, BUTLER, PENNA.

Cleveland Warehouse, 2686 Lisbon Road

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, except where $ is shown in tank car lots, f.o.b. Refinery. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted

Tank car prices do not include state or federal taxes levied on some products.

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

	Prices Jan. 29	Prices Jan. 22	Prices Jan. 15
OKLAHOMA (F. o. b. Oklahoma refineries)			
30-52, 450 e.p. naphtha..	3.625– 3.75	3.50 – 3.625	3.625– 3.75
U. S. Motor Gasoline			
59 octane and below...	3.875– 4.125	3.75 – 3.875	3.75 – 4.00
60-64 octane number...	4.875– 5.125	4.75 – 5.00	4.75 – 5.00
65 octane and above...	5.125– 5.375	5.125– 5.375	5.125– 5.375
60-62, 400 e.p. Gasoline..	4.00 – 4.125	3.75 – 4.00	3.875– 4.00
64-66, 375 e.p. Gasoline..	4.875– 5.00	4.625– 4.875	4.75 – 5.00
68-70, 350-360 e.p. gasoline	5.00 – 5.25	4.875– 5.125	5.00 – 5.25
Aviation Gasoline:			
Below 73 Octane number	5.375– 5.625	5.375– 5.625	5.375– 5.625
WESTERN PENNSYLVANIA (Quotations and/or sales prices to car unloaders)			
52-54 Naphtha.....	4.875– 5.00	4.875– 5.00	5.00 – 5.125
54-56 Naphtha.....	5.00 – 5.25	5.00 – 5.25	5.125– 5.25
U. S. Motor gasoline (58°-62°).....	5.00 – 5.25	5.00 – 5.25	5.125– 5.25
Motor Gasoline			
Minimum 60 octane...	6.375– 6.50	6.375– 6.50	6.375– 6.50
Minimum 65 octane...	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
Minimum 70 octane...	7.125– 7.25	7.125– 7.25	7.125– 7.25
64-66 390 e.p. gasoline...	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
68-70 350-360 e.p.....	6.25 – 6.50	6.25 – 6.50	6.25 – 6.50
CALIFORNIA (3c tax to be added to prices if used in state.)			
54-58 U.S. Motor, 437 e.p.	7.25 – 8.00	8.00 – 9.00	8.00 – 9.00
54-58 U.S. Motor, 437 e.p. for outside state shipment	7.00 – 8.00	7.50 – 8.50	7.50 – 8.50
58-61, 375-400 e.p. gasoline, 65 octane and above	9.25 –10.00	9.50 –10.50	9.50 –10.50
42-45 Engine Distillate 445-480 e.p.....	6.50 – 7.50	6.50 – 7.50	6.50 – 7.50
KANSAS (F. o. b. refinery, Kansas destination)			
U. S. Motor Gasoline			
59 octane and below...	4.125– 4.25	3.875– 4.00	3.875– 4.125
60-64 octane number..	5.125– 5.25	4.75 – 5.125	4.75 – 5.00
65 octane and above...	5.375– 5.50	5.25 – 5.50	5.00 – 5.25
60-62 400 e.p. gasoline...	4.125– 4.375	4.00 – 4.125	4.00 – 4.125
NORTH TEXAS‡ (F. o. b. Wichita Falls district for unrestricted shipment)			
U. S. Motor Gasoline			
59 octane and below...	3.875 4.00	3.50 – 3.75	3.50 – 3.75
60-64 octane number...	4.75 – 5.00	4.375– 4.625	4.375– 4.625
65 octane and above...	4.875– 5.125	4.625– 4.875	4.625– 4.875
60-62 400 e.p. gasoline...	4.00 – 4.125	3.625– 3.875	3.625– 3.75
64-66 375 e.p. gasoline...	4.875– 5.00	4.50 – 4.75	4.75 – 5.00
68-70 350-360 e.p. gasoline	5.00 – 5.125	4.75 – 5.00	5.00 – 5.125
WEST TEXAS‡ (F. o. b. West Texas refinery for unrestricted shipment)			
U. S. Motor Gasoline			
59 octane and below...	3.875– 4.00	3.50 – 3.75	3.50 – 3.75
60-64 octane number..	4.85 – 5.00	4.375– 4.625	4.375– 4.625
65 octane and above...	4.875– 5.125	4.625– 4.875	4.625– 4.875
EAST TEXAS‡ (F. o. b. East Texas refineries for unrestricted shipment)			
U. S. Motor Gasoline			
59 octane and below...	3.625– 3.875	3.375– 3.625	3.50 – 3.75
60-64 octane number...	4.625– 4.75	4.25 – 4.375	4.25 – 4.50
65 octane and above...	4.75 – 4.875	4.50 – 4.625	4.50 – 4.75
NORTH LOUISIANA (For Louisiana and Arkansas destination)			
U. S. Motor Gasoline			
59 octane and below...	4.375	4.00	4.25
60-64 octane number...	5.375	4.875	5.25
65 octane and above...	5.625	5.375	5.75
ARKANSAS (For Arkansas and Louisiana destination)			
U. S. Motor Gasoline			
59 octane and below...	4.375	4.00	4.25
60-64 octane number...	5.375	4.875	5.25
65 octane and above...	5.625	5.375	5.75

Note: Octane numbers shown above in Oklahoma, Kansas, Texas, Louisiana and Arkansas, are determined by C. F. R. motor method. (A. S. T. M. D. 357 — 33 T).

‡Refiners generally receive 0.25c to 0.5c per gallon more for gasoline and kerosine for local or differential territory shipment.

†Prices Nominal. ††Only one refiner Quoting. *Quotations only.

	Prices Jan. 29	Prices Jan. 22	Prices Jan. 15
OHIO (Quotations of S. O. Ohio. Delivered any point in Ohio.)			
U. S. Motor Gasoline....	7.50	7.50	7.50
Above 65 Octane number	7.75	7.75	7.75

NATURAL GASOLINE

OKLAHOMA (F. o. b. Group 3)			
Grade 26-70.....	2.50	2.375– 2.50	2.625
NORTH TEXAS (F. o. b. Breckenridge)			
Grade 26-70.....	2.50	2.375	2.50 – 2.625
CALIFORNIA (F. o. b plants in the Los Angeles basin)			
75-85, 375-390 e.p. for blending.....	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00

BURNING OILS

WESTERN PENNSYLVANIA (Quotations and/or sales prices to car unloaders)			
45 w.w. kerosine.....	4.125– 4.375	4.25 – 4.50	4.375– 4.50
46 w.w. kerosine.....	4.25 – 4.50	4.50 – 4.75	4.625– 4.75
47 w.w. kerosine.....	4.50 – 4.75	4.75 – 5.00	4.75 – 5.00
OKLAHOMA (F. o. b. Oklahoma refineries)			
41-43 w.w. kerosine.....	3.25 – 3.375	3.25 – 3.375	3.25 – 3.50
42-44 w.w. kerosine.....	3.375– 3.50	3.375– 3.50	3.375– 3.625
KANSAS (F. o. b. refinery Kansas destination)			
41-43 w.w. kerosine.....	3.50 – 3.625	3.50 – 3.625	3.50 – 3.625
42-44 w.w. kerosine.....	3.625– 3.75	3.625– 3.75	3.625– 3.75
NORTH TEXAS‡ (F. o. b. Wichita Falls district for unrestricted shipment)			
41-43 w.w. kerosine.....	3.25 – 3.375	3.25 – 3.375	3.25 – 3.375
EAST TEXAS‡ (F.o.b. East Texas refineries for unrestricted shipment)			
41-43 w.w. kerosine.....	3.00 – 3.125	3.125	3.125
NORTH LOUISIANA (For Louisiana and Arkansas destination)			
41-43 w.w. kerosine.....	3.75	3.75	3.75
ARKANSAS (Four Louisiana and Arkansas destination)			
41-43 w.w. kerosine.....	3.75 – 4.00	3.75 – 4.00	3.75 – 4.00
CALIFORNIA (F. o. b. California refineries)			
38-40 w.w. kerosine.....	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75

NEUTRAL OIL

WESTERN PENNSYLVANIA (Quotations and/or sales prices to car unloaders)

Vis.	Viscous Neutrals (Viscosity at 70° F.)		
200 (180 at 100) No. 3 color 420-425 flash:			
Zero pour test.....	30.00 –30.50	30.00 –30.50	29.00 –29.50
10 pour test.....	28.50 –29.00	28.50 –29.00	27.50 –28.00
15 pour test.....	28.00 –28.50	28.00 –28.50	26.50 –27.00
25 pour test.....	27.50 –28.00	27.50 –28.00	26.00 –26.50
180 No. 3 color, 410-415 flash:			
25 pour test.....	25.00 –25.50	25.00 –25.50	24.00 –24.50
150 No. 3 color, 400-405 flash:			
Zero pour test.....	23.50 –24.00	23.50 –24.00	23.00 –23.50
10 pour test.....	22.50 –23.00	22.50 –23.00	22.00 –22.50
15 pour test.....	22.00 –22.50	22.00 –22.50	21.00 –21.50
25 pour test.....	21.00 –21.50	21.00 –21.50	20.00 –20.50

SOUTH TEXAS (F. o. b. South Texas refineries)

Vis. Color	Viscosity at 100° F., pour test 0)		
100—No. 1½-2½ pale...	6.25	6.25	6.25
200—No. 2-3 Pale.....	7.50	7.50	7.50
300—No. 2-3 Pale.....	8.00	8.00	8.00
500—No. 2½-3½ Pale.	9.00	9.00	9.00
750—No. 3-4 Pale.....	9.50	9.50	9.50
1200—No. 3-4 Pale.....	10.00	10.00	10.00
2000— No. 4 Pale.....	10.25 –10.50	10.25–10.50	10.25-10.50
200—No. 5-6 Red Oil..	7.50	7.50	7.50
300—No. 5-6 Red Oil..	8.00	8.00	8.00
500—No. 5-6 Red Oil..	9.00	9.00	9.00
750—No. 5-6 Red Oil..	9.50	9.50	9.50
1200—No. 5-6 Red Oil...	10.00	10.00	10.00
2000—No. 5-6 Red Oil...	10.25 –10.50	10.25 –10.50	10.25-10.50

Note: Red oil prices shown above cover oils with green cast; blue cast red oils are slightly lower in some cases.

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, except where $ is shown in tank car lots, f.o.b. Refinery. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

Tank car prices do not include state or federal taxes levied on some products.

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

Prices Jan. 29

****MID-CONTINENT** (Vis. at 100° F.; F. o. b. Tulsa basis)

Vis. Color	0 to 10 Pour Point	15 to 30 Pour Point
60-85	5.25	4.75
86-110	5.75	5.25
150—No. 3	8.00	7.00
150—No. 4	7.75	6.75
180—No. 3	9.25	8.25
180—No. 4	9.00	8.00
180—No. 5	8.75	7.75
200—No. 3	9.75	8.75
200—No. 4	9.50	8.50
200—No. 5	9.25	8.25
220—No. 3	10.75	9.75
220—No. 4	10.50	9.50
220—No. 5	10.25	9.25
240—No. 3	11.75	10.75
240—No. 4	11.50	10.50
240—No. 5	11.25	10.25
280—No. 3	12.75	11.75
280—No. 4	12.25	11.25
280—No. 5	12.00	11.00
300—No. 3	....	12.50
300—No. 5-6	....	11.50

CHICAGO (F. o. b. Chicago district refineries)

Prices Jan. 29

Vis. Color Pale Oils (Vis. at 100° F.)		*15 to 30 Pour Point Vis. Color Red Oils	
60-85—No. 2	6.50		
86-110—No. 2	7.00	180—No. 5	9.50
140—No. 3	8.50	200—No. 5	10.00
160—No. 3	9.25	220—No. 5	11.00
180—No. 3	10.00	250—No. 5	12.00
200—No. 3	10.50	280—No. 5	12.75
250—No. 3	12.50	300—No 5	13.25

*Oils with 0 to 10 pour point bring 1c higher than above prices. To above prices add 0.25c to obtain prices delivered in Chicago.

CALIFORNIA (F. o. b. California refineries) (Viscosity at 100°F.)

All neutral oils, 23.00c per gal. in tank wagon lots, and 25.00c in iron bbls. to jobbers only, excluding tax.

CYLINDER STOCKS

Prices	Jan. 29	Jan. 22	Jan. 15
MID-CONTINENT (F. o. b. Tulsa basis) (Prices represent quotations and Sales)			
Bright Stocks:			
190-200 Vis. D at 210°	26.50	25.00	25.00
150-160 Vis. D at 210°:			
0-10 cold test	23.75	22.25	22.25
10-25 cold test	23.25	21.75	21.75
25-40 cold test	22.75	21.25	21.25
150-160 Vis. E 210°	22.75	21.25	21.25
120 Vis. D, 210:			
0-10 cold test	22.25	20.75	20.75
10-25 cold test	21.75	20.25	20.25
25-40 cold test	21.25	19.75	19.75
600 St. Ref. Olive Green	5.50 – 5.75	5.00 – 5.50	5.00 – 5.50
600 St. Ref. Dark Green	5.00 – 5.25	4.50 – 5.00	4.50 – 5.00
631 Steam Refined	15.00	14.00	14.00
Black Oil	3.125– 3.375	3.125– 3.25	3.00 – 3.125
CHICAGO (F. o. b. Chicago district refineries)			
140 unfiltered	9.00	9.00	9.00
160 unfiltered	10.00	10.00	10.00
200 unfiltered	11.00	11.00	11.00
Bright stock, 160 vis. No. 8 color:			
0 to 10 cold test	25.50	24.00	24.00
15 to 25 cold test	25.00	23.50	23.50
30 to 40 cold test	24.50	23.00	23.00
E filtered Cyl. Stock	17.00	17.00	17.00
WESTERN PENNSYLVANIA (A. S. T. M. Tests. Quotations and/or sales prices to car unloaders)			
600 Steam Refined	18.50 –19.00	18.50 –19.00	17.00 –17.50
650 Steam Refined	21.00 –21.50	21.00 –21.50	19.50 –20.00
600 Flash	22.00 –22.50	22.00 –22.50	20.50 –21.00
630 Flash	26.50 –27.00	26.50 –27.00	25.00 –25.50
600 Warren E	21.50 –22.00	21.50 –22.00	20.00 –20.50
Bright Stock, No. 8 color 140-150 vis. at 210°, 540-550 flash:			
10 pour test	29.00 –29.50	29.00 –29.50	28.00 –28.50
15 pour test	28.50 –29.00	28.50 –29.00	27.00 –27.50
20 pour test	28.00 –28.50	28.00 –28.50	26.50 –27.00
25 pour test	27.50 –28.00	27.50 –28.00	26.00 –26.50

PETROLATUMS

WESTERN PENNSYLVANIA (Per pound, in barrels, carload lots, f.o.b. Penna. refinery. In tank cars 0.5c per pound less. Quotations are from majority of refiners.)

Snow White	7.375– 7.50	7.375– 7.50	7.375– 7.50
Lily White	6.375– 6.50	6.375– 6.50	6.375– 6.50
Cream White	5.375– 5.50	5.375– 5.50	5.375– 5.50
Light Amber	2.875– 3.00	2.875– 3.00	2.875– 3.00
Amber	2.625– 2.75	2.625– 2.75	2.625– 2.75
Red	2.50 – 2.625	2.50 – 2.625	2.50 – 2.625

†Prices Nominal. **Prices represent quotations and sales.

WAX

	Prices Jan. 29	Prices Jan. 22	Prices Jan. 15
WESTERN PENNSYLVANIA (Per pound, F. o. b. New York)			
122-124 white crude scale a.m.p.	4.00 – 4.05	4.00 – 4.05	4.05 – 4.10
124-126 white crude scale a.m.p.	4.05 – 4.10	4.05 – 4.10	4.10 – 4.20
****OKLAHOMA** (Per pound in barrels; in a few instances, per pound in burlap bags; F. o. b. Oklahoma refineries.)			
124-126 white crude scale a.m.p.	3.75 – 3.875	3.75 – 3.875	3.75 – 3.875
CHICAGO (F. o. b. Chicago district refineries, in cents per pound, in bags, carload lots. Melting points are A.S.T.M. method; add 3° F. to convert into A.M.P.)			
122-124 fully refined	4.65 – 4.75	4.65 – 4.75	4.65 – 4.75
125-127 fully refined	4.90 – 5.00	4.90 – 5.00	4.90 – 5.00
127-129 fully refined	5.05 – 5.15	5.05 – 5.15	5.05 – 5.15
130-132 fully refined	5.65 – 5.75	5.65 – 5.75	5.65 – 5.75
132-134 fully refined	5.90 – 6.00	5.90 – 6.00	5.90 – 6.00
135-137 fully refined	6.65 – 6.75	6.65 – 6.75	6.65 – 6.75

GAS AND FUEL OIL

WESTERN PENNSYLVANIA (For outside Pittsburgh district. Quotations and/or sales prices to car unloaders)			
36-40 fuel oil	3.50 – 3.75	3.75 – 4.00	3.75 – 4.00
OKLAHOMA (F. o. b. Oklahoma refineries)			
38-40 straw furnace Oil	3.00 – 3.125	3.125– 3.25	3.125– 3.25
32-36 straw gas oil	2.125– 2.25	2.125– 2.25	2.125– 2.25
32-36 straw gas oil zero	3.00 – 3.125	3.125	3.125– 3.25
32-36 dark gas oil	2.125	2.125	2.125
32-36 dark gas oil zero	3.00 – 3.125	3.00 – 3.125	3.125– 3.25
28-30 fuel oil,zero(perbbl.)	$1.05 –$1.15	$1.05 –$1.15	$1.05 –$1.15
28-30 fuel oil (per bbl.)	$0.875–$0.90	$0.875–$0.90	$0.875–$0.90
24-26 fuel oil (per bbl.)	$0.70 –$0.75	$0.70 –$0.75	$0.70 –$0.75
22-26 fuel oil (per bbl.)	$0.65 –$0.70	$0.65 –$0.70	$0.65 –$0.70
18-22 fuel oil (per bbl.)	$0.60 –$0.65	$0.60 –$0.65	$0.60 –$0.65
16-20 fuel oil (per bbl.)	$0.60 –$0.625	$0.60 –$0.625	$0.60 –$0.625
14-16 fuel oil (per bbl.)	†$0.60	†$0.60	†$0.60
KANSAS (F. o. b. refinery Kansas destination)			
38-40 straw furnace Oil	3.25 – 3.375	3.125– 3.375	3.125– 3.375
18-22 fuel oil (per bbl.)	$0.70 –$0.725	$0.675–$0.725	$0.625–$0.675
10-14 fuel oil (per bbl.)	$0.60 –$0.625	$0.575–$0.625	$0.575–$0.625
NORTH TEXAS (F. o. b. Wichita Falls district refineries for unrestricted shipment)			
38-40 straw furnace Oil	3.00 – 3.125	3.00 – 3.125	3.125– 3.25
38-40 prime white Furnace Oil	3.125	3.125	3.25
32-36 gas oil, zero	3.00	3.00 – 3.125	3.125– 3.25
32-36 gas oil	2.00 – 2.125	2.00 – 2.125	2.00 – 2.125
24-26 fuel oil (per bbl.)	$0.65 –$0.70	$0.65 –$0.70	$0.65 –$0.70
18-22 fuel oil (per bbl.)	$0.55 –$0.60	$0.55 –$0.60	$0.55 –$0.60
WEST TEXAS (F. o. b. West Texas refineries for unrestricted shipment)			
32-36 gas oil, zero	3.00	3.00	3.00
18-22 fuel oil (per bbl.)	$0.50 –$0.55	$0.50 –$0.55	$0.50 –$0.55
EAST TEXAS (F.o.b. East Texas refinery for unrestricted shipment			
38-40 p.w. furnace oil	3.00	3.00 – 3.125	3.125
32-36 gas oil	1.75	1.75 – 1.875	1.75 – 2.00
20-24 fuel oil	$0.45 –$0.50	$0.45 –$0.50	$0.45 –$0.50
NORTH LOUISIANA (For Louisiana and Arkansas destination)			
32-36 gas oil	3.00	3.00	3.00
32-36 gas oil, zero	3.50	3.50	3.50
20-24 fuel oil	$0.80	$0.80	$0.80
16-20 fuel oil	$0.75	$0.75	$0.75
10-14 fuel oil	$0.65	$0.65	$0.65
ARKANSAS (For Arkansas and Louisiana destination)			
32-36 gas oil	3.00	3.00	3.00
32-36 gas oil, zero	3.50	3.50	3.50
28-30 gas oil, zero	3.25	3.25	3.25
20-24 fuel oil (per bbl.)	$0.80	$0.80	$0.80
16-20 fuel oil	$0.75	$0.75	$0.75
10-14 fuel oil	$0.65	$0.65	$0.65
CALIFORNIA* (F. o. b. San Joaquin Valley)			
14-18 fuel oil (per bbl.)	$0.45 –$0.55	$0.45 –$0.55	$0.55 –$0.60
14-18 bunker oil (per bbl.)	$0.60 –$0.70	$0.60 –$0.70	$0.60 –$0.70
30-34 gas oil (per bbl.)	$1.00 –$1.10	$1.00 –$1.10	$1.00 –$1.10
27 Plus diesel oil (per bbl.)	$1.10 –$1.15	$1.10 –$1.15	$1.10 –$1.15

*Nominal pipe line charge to San Francisco, 24c per bbl. more, and to San Pedro, 20c per bbl. more.

Tank Wagon, Service Station Markets for Gasoline and Kerosine

(OIL PRICE HANDBOOK has t.w. and s.s. markets for a whole year, arranged for quick reference)

Tax column includes 1c federal tax, state gasoline tax; also city and county taxes as indicated in footnotes

These Prices in Effect January 29, 1934, as Posted by Principal Marketing Companies

Latest Changes in Tank Wagon Markets

Motor Gasoline

S. O. New Jersey—S.s. cut 0.4c, Spartanburg, to 21c, **Jan. 11.**

S.s. cut 1.5c, Salisbury, to 20c, Jan. 16; s.s. cut 1c, to 19c, **Jan. 22.**

S.s., up 3.3c, Roanoke, to 19.8c **Jan. 20.**

S.s. cut 0.4c, Charlotte, 21c, **Jan. 22.**

S.s. cut 1.2c, Hickory, to 20.5c, **Jan. 22.**

All above prices include state and federal taxes.

S. O. New York—Correction: In Jan. 9 cut of 1c on dealer, t.w. and s.s. prices and 0.5c on t.c. prices, Rochester dealer, t.w. and s.s prices unchanged at, 8.5c, 15c and 16c respectively. Posted t.c. price only was cut that date 0.5c, to 7.3c.

Dealer price cut only 0.5c, E. Providence, **Jan. 9,** to 9.5c, rather than cut 1c, as previously reported.

S. O. Kentucky—Crown and Kyso t.w. and s.s. cut 1c, Lexington, to 19c for Crown and 17.5 for Kyso, both t.w. and s.s. **Jan. 13.**

Crown and Kyso t.w. and s.s. cut 1c, Vicksburg, to 20c for Crown and 18.5c for Kyso, **Jan. 12.**

S. O. Indiana—Stanolind: Correction: price changes on s.s. at Indianapolis, since Nov. 16 have been: Nov. 16, 15.9c, including 5.5c state and federal taxes; Dec. 21, up 0.2c due to Indiana chain store tax, to 16.1c; Jan. 1, cut 0.7c, 0.5c of which was due to reduction in federal tax, to 15.4c.

Stanolind s.s. cut 0.5c, Huron, to 17c, **Jan. 17,** Price was changed in Jan. 24 issue.

S. O. Nebraska—Red Crown: T.w. up 0.5c, s.s. up 0.7c, Scottsbluff, to 19.8c and 20c, **Jan. 18.**

T.w. and s.s. cut 0.5c, McCook, both to 16.5c, **Jan. 26.**

Reliance: T.w. s.s. up 0.7c, Scottsbluff, both to 18c, **Jan. 18;** t.w. and s.s. cut 0.7c, to 17.3c, **Jan. 25.**

T.w. and s.s. cut 0.15c, Omaha, both to 14.25c, **Jan. 20.**

T.w. and s.s. cut 0.6c, McCook, both to 15.9c, **Jan. 26.**

S. O. Louisiana—S.s. cut 1c, New Orleans, to 16c, including 7c tax, **Jan. 7;** s.s. cut 1c, to 15c, **Jan. 13;** and S.s. up 2.5c, to 17.5c, **Jan. 17.**

S.s. up 2c, Chattanooga, to 21c, **Jan. 17;** s.s. up 1.5c, to 22.5c, **Jan. 22.**

S.s. up 2c, Nashville, to 20.5c, **Jan. 17.**

T.c., and t.w. up 0.1c, to 8c and 14.5c, excluding taxes, and s.s. up 1.5c, to 22c, including 8c tax, **Jan. 22.**

S.s. up 1.5c, Shreveport, to 17c, **Jan. 20.**

S.s. cut 2c, Memphis, to 19c, **Jan. 20.**

Kerosine

S. O. New York—Cut 0.5c, Boston, to 8c, **Jan. 5.**

Atlantic Refining—Cut 0.5c, New Haven, to 8c t.w., **Jan. 19.**

S. O. Louisiana—Cut 2c, New Orleans, to 10c t.w., including 1c state tax, **Jan. 13;** up 2c, to 12c t.w., **Jan. 20.**

S.O. NEW JERSEY TERRITORY

Essolene

	Posted Tank Car	Retail T.W.	Taxes	Posted S.S.	Kerosine T.W.
Atlantic City, N. J.	7	13.5	4	17	10
Newark, N. J.	6.3	12.8	4	15.5	9.5
Annapolis, Md.	6.6	13.1	5	17.6	10
Baltimore, Md.	6.1	12.6	5	17.1	9
Cumberland, Md.	7.6	14.1	5	18.5	12.7
Washington, D. C.	6.3	12.8	3	15.3	11
Danville, Va.	7.7	14.2	6	19.7	12.9
Norfolk, Va.	6.2	12.7	6	17	11.3
Petersburg, Va.	7	13.5	6	19	11.4
Richmond, Va.	6.6	13.1	6	18.6	11.7
Roanoke, Va.	7.8	14.3	6	19.8	12.9
Charleston, W. Va.	7	13.5	5	18	12.6
Parkersburg, W. Va.	6.3	12.8	5	17.3	11.2
Wheeling, W. Va.	7	13.5	5	18	12.2
Charlotte, N. C.	8.4	14.9	7	21	13.5
Hickory, N. C.	8.7	15.2	7	20.5	13.7
Mt. Airy, N. C.	8.7	15.2	7	21.7	13.8
Raleigh, N. C.	8.2	14.7	7	21.2	13.3
Salisbury, N. C.	8.5	15	7	19	13.6
Charleston, S. C.	6.2	12.7	7	19.2	11.3
Columbia, S. C.	8	14.5	7	21	13.2
Spartanburg, S. C.	8.4	14.9	7	21	13.5

Price basis to dealers: Dealer contracts for Essolene are written at 2½c over posted tank car prices. Lease and license dealers, 1c per gal. rental, 0.5c license. Note: Beginning Dec. 28, 1933, voluntary discounts off posted tank car price given to dealers, thru territory, where service station prices are subnormal.

Price basis to commercial consumers: on Essolene, on t.w. deliveries on yearly basis, over posted tank car prices: 1 to 74,999 gals., 2.5c; 75,000 to 299,999 gals., 1.5c; 300,000 gals. and over, 1c.

Kerosine Discount: 1c off t.w. price for 25 gals. or more, under contract thru territory (Baltimore City—contract not necessary) except no discount in New Jersey.

S. O. NEW YORK

Socony Gasoline

	Posted T.C.	Posted Dealer	Taxes	Total T.W.	S.S.	Kerosine T.W.
Blissville (New York City, including all Boroughs)	6.5	9	4	15.5	16.5	8.5
Albany, N. Y.	6.6	9.1	4	15.6	16.6	8.5
Syracuse, N. Y.	7.2	9.6	4	16.1	17.1	8.5
Rochester, N. Y.	7.3	8.5	4	15	16	8
Buffalo, N. Y.	7.2	9.7	4	16.2	17.2	8
Burlington, Vt.	8.3	10.8	5	18.3	19.3	9
Manchester, N. H.	7.7	10.2	5	17.7	18.7	8.5
Hartford, Conn.	6.9	9.4	3	14.9	15.9	8.5
New Haven, Conn.	6.7	9.2	3	14.7	15.7	8.5
E. Providence, R. I.	7	9.5	3	14.5	15.5	†8
Boston, Mass.	6.5	9	4	15.5	16.5	8
Portland, Me.	6.7	9.2	5	16.7	17.7	†8
Bangor, Me.	7	9.5	5	17	18	9.5

†Price is for quantities over 25 gals.; for quantities under 25 gals., price is 9c at Providence and Portland.

Q.D.A. to commercial accounts effective Jan. 12, 1934, on yearly purchases, over posted tank car price, (generally posted dealer price less 2.5c), is as follows: under 74,999 gals. 2.5c over; 75,000 to 299,999 gals., 1.5c; 300,000 to 499,999 gals. 1c; 500,000 to 999,999 gals., 0.75c; and 1,000,000 gals. and over 0.5c over posted t.c. price.

Third Grade Gasoline

Offered only at points where competition requires at s.s., 2c below s.s. prices of Socony. Dealers get 2c margin.

ATLANTIC REFINING

Atlantic White Flash Plus Gasoline

	Total T.W.	Taxes	T.W.	S.S.	Kerosine T.W.
Pittsburgh, Pa.	12.5	4	16.5	17.5	10
Philadelphia, Pa.	11	4	15	16	10
Allentown, Pa.	12.5	4	16.5	17.5	10
Erie, Pa.	12.5	4	16.5	17.5	10
Scranton, Pa.	12.5	4	16.5	17.5	10
Altoona, Pa.	12.5	4	16.5	17.5	10
Dover, Del.	12.5	4	16.5	17.5	10
Wilmington, Del.	12.5	4	16.5	17.5	10
Boston, Mass.	11.5	4	15.5	16.5	8
Springfield, Mass.	12.1	4	16.1	17.1	8
Worcester, Mass.	12	4	16	17	8.5
Fall River, Mass.	11.8	4	15.8	16.8	8
Providence, R. I.	11.5	3	14.5	15.5	8.5
Hartford, Conn.	11.9	3	14.9	15.9	8.5
New Haven, Conn.	11.7	3	14.7	15.7	8
Atlantic City, N. J.	13.5	4	17.5	17	10
Camden, N. J.	13	4	17	16.5	10
Trenton, N. J.	13.1	4	17.1	16.6	10
Annapolis, Md.	13.1	5	18.1	17.6	10
Baltimore, Md.	12.6	5	17.6	17.1	9
Hagerstown, Md.	13.6	5	18.6	15	10
Richmond, Va.	13.1	6	19.1	18.6	11.7
Wilmington, N. C.	12.8	7	19.8	19.3	11.4
Brunswick, Ga.	13.5	7	20.5	21.5	13
Jacksonville, Fla.	12.5	8	20.5	21.5	12.5

Dealer discounts: on Atlantic White Flash Plus gasoline, thru territory, except Georgia and Florida, beginning Dec. 20, 1933: divided dealers, price equal to 3.5c off posted s.s. price; undivided dealers, price equal to 4c off posted s.s. price; authorized dealers contracts previous to Aug. 19, 1933, price equal to 3c less than posted s.s. price, plus 1c rental. In Georgia and Florida, discount is 0.5c less in all three instances than thru rest of territory.

Commercial consumers discou ts: thru Pennsylvania and Delaware, off posted t.w. price (beginning Dec. 4, 1933): 1 to 74,999 gals., 2.5c; 75,000 to 299,999 gals., 3.5c; 300,000 gals. and over, 4c.

Commercial accounts, under contract for one year, are sold at a discount off the posted prices with due consideration to competition.

*Georgia kerosine prices include 1c state tax.

S. O. OHIO

Sohio X-70 Gasoline

Ohio statewide	12.5	5	17.5	18.5	*13.5

Renown Green (Third Grade)

Ohio statewide	...	5	....	17	*13.5

*Kerosine prices include 1c state tax, effective July 22, 1933. Kerosine t.w. in Allen, Mercer, Paulding, Putnam, and Van Wert counties is 12.5c.

Discounts: To dealers and commercial consumers off posted t.w. price: on Ethyl and X-70, 2c. On

Above prices include these inspection fees on both gasoline and kerosine, per gallon, figured on basis of 50 gallons per barrel:

Alabama, 1/40c on gasoline, 1/2c on kerosine; Arkansas, 1/5c per gal. in a single barrel, 1/20c per gal. in bulk; Florida, 1/8c; Illinois, 3/100c; Indiana, 1/2c per gal. in a single barrel; 3/10c per gal. in lots of 2 to 10 bbls., 1/5c for 10 to 50 bbls., 2/25c for over 50 bbls.; Kansas, 1/50c, (3/50c can be charged to meet inspection department expenses); Louisiana, 1/32c; Minnesota, 2/25c; Missouri, gasoline, 1.5c per bbl., in lots of 10 bbls. or more; Nebraska, 3/100c; Nevada, gasoline, 1/20c; North Carolina, 1/4c; North Dakota, 1/20c; Oklahoma, 2/25c per gal. in lots of more than 50 bbls., 1/5c in lots less than 50 bbls.; South Carolina, 1/8c; South Dakota, 1/10c; Tennessee, 2/5c; and Wisconsin, 1/25c.

Kerosine inspection fees only: Iowa, 2/25c; Michigan, 4/5c per gal. for first 2 bbls.; 3/5c for next 3; 2/5c for next 5; 3/10c for next 15, and 1/5c per gal. in lots over 25 bbls.

Tank Wagon, Service Station Markets for Gasoline and Kerosine

Tax column includes 1c federal tax, state gasoline tax; also city and county taxes as indicated in footnotes

These Prices in Effect January 29, 1934, as Posted by Principal Marketing Companies

S. O. OHIO (Cont'd)

Renown Green, 1.75c off posted s.s. price. Kerosine 2.5c off t.w.

To contract customers per month: up to 6,250 gals., open dealers' price; 6,250 to 25,000 gals., 0.5c off open dealers' price; over 25,000 gals., 1c off open dealers' price.

Prices to governmental units to be Q.D.A. bracket applicable to the gallons specified and the period indicated. State highway departments to get bids on basis of full 1c Q.D.A.

S. O. KENTUCKY

Crown Gasoline

	T.W.	Taxes	Total T.W.	S.S.	Kerosine T.W
Lexington, Ky.	13	6	19	19	11
Louisville, Ky.	13.5	6	19.5	19.5	11
Paducah, Ky.	12.5	6	18.5	18.5	10
Covington, Ky.	13.5	6	19.5	19.5	11
Jackson, Miss.	13.5	7	20.5	20.5	*13
Vicksburg, Miss.	13	7	20	20	*13
Birmingham, Ala.	15.5	*8	23.5	23.5	12
Mobile, Ala.	14.5	*8	22.5	22.5	12.5
Montgomery, Ala.	12	*9	21	21	*14.5
Macon, Ga.	14.5	7	21.5	21.5	*14
Atlanta, Ga.	14	7	21	21	*14
Augusta, Ga.	14	7	21	21	*14
Savannah, Ga.	14.5	7	21.5	21.5	*14
Jacksonville, Fla.	13.5	8	21.5	21.5	12.5
Miami, Fla.	13.5	8	21.5	21.5	13.5
Tampa, Fla.	13.5	8	21.5	21.5	12.5
Pensacola, Fla.	12.5	*9	21.5	21.5	13.5

Kyso (Third Grade)

Lexington, Ky.	11.5	6	17.5	17.5	11
Louisville, Ky.	12	6	18	18	11
Paducah, Ky.	11	6	17	17	10
Covington, Ky.	11.5	6	17.5	17.5	11
Jackson, Miss.	12	7	19	19	*13
Vicksburg, Miss.	11.5	7	18.5	18.5	*13
Birmingham, Ala.	14	*8	22	22	12
Mobile, Ala.	13	*8	21	21	12.5
Montgomery, Ala.	10.5	*9	19.5	19.5	*14.5
Atlanta, Ga.	12.5	7	19.5	19.5	*14
Augusta, Ga.	12.5	7	19.5	19.5	*14
Macon, Ga.	13	7	20	20	*14
Pensacola, Fla.	11.5	*9	20.5	20.5	*13.5

Dealer Discount: off posted s.s. price, on Crown and Crown Ethyl gasolines, to "undivided" dealers, 4c; on Kyso, 3c; to "divided" dealers, Crown and Ethyl, 3.5c, and Kyso, 2.5c, all effective on or about Jan. 1, 1934.

***Taxes:** in the tax columns are included these city and county gasoline taxes at the following points: Birmingham, 1c city; Mobile, 1c city; Montgomery, 1c city and 1c county; Pensacola, 1c city. Georgia and Mississippi kerosine prices include 1c state tax. Montgomery kerosine price includes ½c city tax.

S. O. INDIANA

Standard Red Crown Gasoline

Chicago, Ill.	13.3	*4	17.3	17.3	9.7
Decatur, Ill.	13.7	*4	17.7	17.7	10.2
E. St. Louis, Ill.	13	*4	17	16.2	9.5
Joliet, Ill.	13.7	*4	17.7	17.7	10.2
Peoria, Ill.	13.7	*4	17.7	17.7	10.2
Quincy, Ill.	13.5	*4	17.5	17.5	10
Springfield, Ill.	13.7	*4	17.7	17.7	10.2
Indianapolis, Ind.	13.9	*5	18.9	18.9	‡14.2
Evansville, Ind.	10.7	*5	15.7	15.5	‡14
South Bend, Ind.	14.2	*5	19.2	19.2	‡14.5
Detroit, Mich.	13.5	4	17.5	17.5	10.5
Grand Rapids, Mich.	13.7	4	17.7	17.7	10.2
Saginaw, Mich.	14	4	18	18	10.5
Marquette, Mich.	14.3	4	18.3	18.3	10.8
Green Bay, Wisc.	13.7	5	18.7	18.7	10.2
Madison, Wisc.	13.4	5	18.4	18.4	9.9
Milwaukee, Wisc.	13.2	5	18.2	18.2	9.7
La Crosse, Wisc.	14.3	5	19.3	19.3	10.8
Minneapolis, Minn.	13.9	4	17.9	17.9	10.4
Duluth, Minn.	14.2	4	18.2	18.2	10.4
Mankato, Minn.	13.8	4	17.8	17.8	10.3
Des Moines, Ia.	13.6	4	17.6	17.6	8
Sioux City, Ia.	13.2	4	17.2	17.2	9.7
Davenport, Ia.	13.6	4	17.6	17.6	10.1
Mason City, Ia.	13.6	4	17.6	17.6	10.1
St. Louis, Mo.	12.2	†3.5	15.7	15.7	8.7
Kansas City, Mo.	12.7	†4	16.7	16.7	8.2
St. Joseph, Mo.	12.3	†4	16.3	16.3	8.3
Fargo, N. D.	15.6	4	19.6	19.6	12.1
Grand Forks, N. D.	15.9	4	19.9	19.9	12.4
Minot, N. D.	15.6	4	19.6	19.6	12.1
Pierre, S. D.	14.6	*5	19.6	19.6	11.1
Huron, S. D.	14.9	*5	19.9	19.9	11.4
Wichita, Kansas	11.6	4	15.6	15.6	8.1
Bartlesville, Okla.	11	5	16	18.5	8.5

Note: Kerosine s.s. prices are generally 3c above normal t.w. price.

Stanolind Gasoline (Third Grade)

Stanolind prices are 1.5c under normal Red Crown prices, thru territory, except at following points:

Bartlesville, Okla.	9	5	14	15.5	8.5
Evansville, Ind.	9.7	*5	14.7	14.5	‡14

S. O. INDIANA (Cont'd)

Stanolind Gasoline (Third Grade)

	T.W.	Taxes	Total T.W.	S.S.	Kerosine T.W.
Indianapolis, Ind.	12.4	*5	17.4	15.4	‡14.2
E. St. Louis, Ill.	11.5	*4	15.5	14.7	9.5
Springfield, Ill.	12.2	*4	16.2	15.5	10.2
Detroit, Mich.	12.5	4	16.5	16.5	10.5
Duluth, Minn.	12.7	4	16.7	13.9	10.4
Minneapolis	12.4	4	16.4	15.4	10.4
Green Bay, Wisc.	12.2	5	17.2	16.5	10.2
Grand Forks, N. D.	10.5	4	14.5	16.5	12.4
Huron, S. D.	13.4	*5	18.4	17	11.4

†St. Louis tax includes 0.5c city tax; Kansas City and St. Joseph, 1c city tax. ‡Includes 4c state tax.

*Illinois collects a sales tax of 2%, to cover which Standard charges 0.2c per gallon on gasoline, kerosine and naphtha: this tax is included in t.w. and s.s. columns in above table for gasoline, but not in tax column. South Dakota gasoline and kerosine prices include 0.1c sales tax. Indiana t.w. and s.s. gasoline prices include 0.2c for chain store tax.

Q.D.A. effective Sept. 1, 1933 to controlled dealers and AAA commissions and Sept. 8 to uncontrolled dealers.

Discounts to dealers and AAA commissions, thru territory, off s.s. price: Ethyl and Red Crown gasoline, 3c; Stanolind 2c. Rentals on gallonage basis, give dealers 0.5c additional.

Discounts to consumers (large consumers and governmental units), thru territory, except Chicago and St. Louis, off t.w. price: Ethyl and Red Crown, 2c; Stanolind 1c.

In Chicago, 0.5c additional.

In St. Louis, effective Jan. 1, 1934, these discounts apply: off posted s.s. price, on monthly purchases, on Ethyl and Red Crown: 300 to 3,000 gals., 2c; 3,000 to 10,000 gals., 3c; and 10,000 gals. and over, 3.5c. On Stanolind, 1c, beginning with 300 gals.

S. O. NEBRASKA

Standard Red Crown Gasoline

Omaha, Neb.	13.3	5	18.3	19.3	9
McCook, Neb.	11.5	5	16.5	16.5	9
Norfolk, Neb.	13.8	5	18.8	19.8	11.3
North Platte, Neb.	14.8	5	19.8	20.8	9
Scottsbluff, Neb.	14.8	5	19.8	20	11

Reliance Gasoline (Third Grade)

Reliance gasoline prices are 1.5c below normal Red Crown prices. Following points are among those below this normal differential:

Omaha, Neb.	9.25	5	14.25	14.25	9
McCook, Neb.	10.9	5	15.9	15.9	9
Norfolk, Neb.	12.3	5	17.3	17.4	11.3
North Platte, Neb.	12	5	17	17	9
Scottsbluff, Neb.	12.3	5	17.3	17.3	11

Discounts: Q.D.A. effective Sept. 6, 1933: on t.w. deliveries of gasoline, to large industrial users and governmental units, on monthly purchases of 500 gals., or yearly purchases of 6,000 gals. 2c off s.s. price on Ethyl and Red Crown, and 1c on Reliance.

Off s.s. price, to dealers and AAA commissions: Ethyl and Red Crown, 3c; Reliance, 2c. Rentals under lease and agency, 0.5c per gal. additional.

S. O. LOUISIANA

	Posted Tank Car	Essolene Posted Retail T.W.	Tax es	Posted S.S.	Kerosine T W
Little Rock, Ark.	6.1	12.6	7	19.1	11
Alexandria, La.	6.1	12.6	*7	19.1	*10
Baton Rouge, La.	6.2	12.7	6	18.2	*12
New Orleans, La.	5.8	12.3	*7	17.5	*12
Lake Charles, La.	6.2	12.7	*7	19.2	*12
Shreveport, La.	5	11.5	6	17	*12
Lafayete, La.	6.3	12.8	*7	19.3	*12
Bristol, Tenn.	9	15.5	8	21	14
Chattanooga, Tenn.	8.5	15	8	22.5	12
Knoxville, Tenn.	8.7	15.2	8	22.7	13.5
Memphis, Tenn.	7.1	13.6	8	19	9.5
Nashville, Tenn.	8	14.5	8	22	11

*Lake Charles, Alexandria, New Orleans and Lafayette gasoline tax includes 5c state tax, 1c federal tax, and 1c parish tax. Louisiana kerosine prices include 1c state tax.

Price basis to dealers: Dealer contracts are written 2.5c per gal. above posted tank car price, effective Dec. 28, 1933, less 0.5c voluntary allowance, thru territory.

Price basis to commercial consumers: on t.w. deliveries, on yearly basis, figured over posted tank car prices: 1 to 74,999 gals., 2.5c; 75,000 to 299,999 gals., 1.5c; and 300,000 gals. and over 1c.

Kerosine discount: 2c per gal. off t.w. price to open dealers.

MAGNOLIA PETROLEUM

	T.W.	Taxes	Mobilgas Total T.W.	S.S.	Kerosine T.W.
Muskogee, Okla.	9.5	5	14.5	18	8.5
Oklahoma City.	9.5	5	14.5	18	8.5
Tulsa, Okla.	9.5	5	14.5	18	8.5
Fort Smith, Ark.	8.6	†5	13.6	17.1	9
Little Rock, Ark.	8.6	7	15.6	19.1	9
Texarkana, Ark.	8.5	*5	13.5	17	8.5
Dallas, Tex.	10.5	5	15.5	19	8.5
Fort Worth, Tex.	10.5	5	15.5	19	8.5
Houston, Tex.	9.5	5	14.5	18	8.5
San Antonio, Tex.	10.5	5	15.5	19	8.5
El Paso, Tex.	11	5	16	19.5	11

Metro Gasoline (Third Grade)

Muskogee, Okla.	7	5	12	14.5	8.5
Oklahoma City.	8	5	13	15.5	8.5
Tulsa, Okla.	8	5	13	15.5	8.5
Fort Smith, Ark.	8.1	†5	13.1	15.6	9
Little Rock, Ark.	8.1	7	15.1	17.6	9
Texarkana, Ark.	7	*5	12	14.5	8.5
Dallas, Tex.	8.5	5	13.5	16	8.5
Fort Worth, Tex.	4.5	5	9.5	11	8.5
Houston, Tex.	8.5	5	13.5	16	8.5
San Antonio, Tex.	9.5	5	14.5	17	8.5
El Paso, Tex.	9	5	14	16.5	11

Dealer discounts: on Mobilgas thru Arkansas, 3c off t.w. price to dealers, beginning Sept. 8, 1933. On Metro gasoline, 1c per gal. off t.w. price thru territory.

*In Texarkana, 4c Texas tax applies; outside Texarkana, 6c Arkansas tax applies.

†In Fort Smith, 4c Oklahoma tax applies: outside Fort Smith, 6c Arkansas tax applies.

CONTINENTAL OIL

Conoco Bronze Gasoline

Denver, Col.	13.5	5	18.5	21	12.5
Pueblo, Col.	11.5	5	16.5	19	13
Grand Junc., Col.	15.5	5	20.5	23	15
Casper, Wyo.	14	5	19	21.5	11.5
Cheyenne, Wyo.	12.5	5	17.5	20	13
Butte, Mont.	14.5	6	20.5	23	17.5
Helena, Mont.	16.5	6	22	24.5	17.5
Salt Lake City, Utah.	16.5	5	21.5	24	16
Boise, Ida.	16.5	6	22.5	25	18
Twin Falls, Ida.	16.5	6	22.5	25	18
Albuquerque, N. M.	12.5	†6.5	19	22	13

Demand (Third Grade)

Denver, Col.	12.5	5	17.5	19	12.5
Cheyenne, Wyo.	11.5	5	16.5	18	13
Salt Lake City, Utah.	15.5	5	20.5	22	16
Boise, Ida.	15.5	6	21.5	23	18
Albuquerque, N. M.	11.5	†6.5	18	19.5	13

†Includes city tax of 0.5c.

Discounts: effective Oct. 21, 1933, discount to dealers, with or without contract, thru territory, except New Mexico: off s.s. prices: 3c on Conoco gasoline, and 2c on Demand (third grade).

Consumers and governmental agencies pay posted t.w. price.

S. O. CALIFORNIA

Standard Gasoline

San Francisco, Cal.	12.5	4	16.5	19.5	12.5
Los Angeles, Cal.	12	4	16	19	12.5
Fresno, Cal.	13.5	4	17.5	20.5	14
Phoenix, Ariz.	12.5	6	18.5	21.5	†16
Reno, Nev.	15	5	20	23	15.5
Portland, Ore.	13	6	19	22	13.5
Seattle, Wash.	13	6	19	22	13.5
Spokane, Wash.	16	6	22	25	18
Tacoma, Wash.	13	6	19	22	13.5

Flight Gasoline (Third Grade)

San Francisco, Cal.	11	4	15	17	12.5
Los Angeles, Cal.	10.5	4	14.5	16.5	12.5
Fresno, Cal.	12	4	16	18	14
Reno, Nev.	13.5	5	18.5	20.5	15.5
Phoenix, Ariz.	11	6	17	19	†16
Portland, Ore.	11.5	6	17.5	19.5	13.5
Seattle, Wash.	11.5	6	17.5	19.5	13.5
Tacoma, Wash.	11.5	6	17.5	19.5	13.5
Spokane, Wash.	14.5	6	20.5	22.5	18

†Includes 5c state tax.

Discounts: On all gasolines: to 100% dealers 1c off t.w. price.

Tank Wagon, Service Station Markets for Gasoline and Kerosine

Tax column includes 1c federal tax, state gasoline tax; also city and county taxes as indicated in footnotes

These Prices in Effect January 29, 1934, as Posted by Principal Marketing Companies

CANADA

Prices of Imperial Oil Ltd.

Per Imperial Gallon, which is 1.2 U. S. Gallons

Imperial Three Star Gasoline

Hamilton, Ont.	18.5	6	*24.5	27.5	17.5
Toronto, Ont.	18.5	6	*24.5	27.5	17.5
Brandon, Man.	23.3	7	30.3	33.3	21.8
Winnipeg, Man.	21.7	7	28.7	31.7	20.2
Regina, Sask.	23	6	29	32	21.5
Saskatoon, Sask.	25.8	6	31.8	34.8	24.3
Edmonton, Alta.	25.2	6	31.2	34.2	23.7
Calgary, Alta.	22.5	6	28.5	31.5	21
Vancouver, B. C.	21	7	*28	31	24
Montreal, Que.	18	6	24	27	17
St. John, N. B.	19.5	7	26.5	30.5	21
Halifax, N. S.	19.5	6	25.5	29.5	21

*No established t.w. price at these points: dealers and consumers' prices based on "so many cents below s.s. prices"; open dealers get 3c off.

Discount to dealers and A.R.D. Accounts: thru Ontario, Quebec and British Columbia, open dealers 3c off s.s. price; 100% accounts, 1c additiona

Aviation Gasoline Prices

Following are tank wagon prices of aviation gasoline in principal marketing territories (Stanavo aviation in all territories except Magnolia Petroleum and Continental Oil Co.) Tax column includes 1c federal tax, and state tax; also municipal taxes are indicated in footnotes.

S. O. NEW JERSEY

Prices in Effect Jan. 29, 1934

	T.W.	Tax	Total T.W.
Newark, N. J.	15.5	1	16.5
Baltimore, Md.	15.5	5	20.5
Washington, D. C.	15.6	3	18.6

Discounts: to dealers and contract consumers 2c per gal. off posted t.w. price.

COLONIAL BEACON OIL CO.

New York City	15	4	19
Boston, Mass.	17	4	21

Discounts: to dealers and contract consumers 2c per gal. off posted t.w. price.

S. O. PENNSYLVANIA

Philadelphia, Pa.	13	4	17
Pittsburgh, Pa.	17.5	4	21.5
Altoona, Pa.	17.5	4	21.5
Harrisburg, Pa.	15.5	4	19.5

S. O. OHIO

Thru Ohio:			
Aviation Gasoline	14.5	5	19.5
Stanavo Aviation, with lead, 74 octane (Green)	15.5	5	20.5

Discounts: to airports, 1 to 4c, based on quantity.

S. O. INDIANA

Chicago, Ill.	†16.3	4	20.3
Indianapolis, Ind.	16.7	5	21.7
Detroit, Mich.	17	4	21
Milwaukee, Wisc.	16.2	5	21.2
Minneapolis, Minn.	16.9	4	20.9
St. Louis, Mo.	15.2	3	18.2
Kansas City, Mo.	15.7	*4	19.7
Fargo, N. D.	18.6	4	22.6
Huron, S. D.	**17.9	5	22.9
Wichita, Kans.	14.6	4	18.6

*Includes 1c city tax.
**Includes 0.1c to cover sales tax.
†Includes 0.2c cent to cover Ill. 2% sales tax.

S. O. LOUISIANA

Little Rock, Ark.	16	7	23
New Orleans, La.	14.4	*7	21.4
Shreveport, La.	15.4	6	21.4
Chattanooga, Tenn.	17.2	8	25.2
Memphis, Tenn.	15.4	8	23.4

Dealer and commercial consumer discount: 2c off posted retail t.w.
*Includes 1c parish tax.

MAGNOLIA PETROLEUM

	T.W.	Tax	Total T.W.
Dallas, Tex.	14	5	19

CONTINENTAL OIL CO.

Denver, Colo.	16.5	5	21.5
Cheyenne, Wyo.	17.5	5	22.5
Helena, Mont.	19	6	25
Salt Lake City, Utah.	19.5	5	24.5
Albuquerque, N. M.	15.5	*7	22

*Includes city tax of 0.5c.

S. O. CALIFORNIA

Phoenix, Ariz.	15.5	6	21.5
Los Angeles, Cal.	15	4	19
San Francisco, Cal.	15.5	4	19.5
Reno, Nev.	18	5	23
Portland, Ore.	16	6	22
Seattle, Wash.	16	6	22
Spokane, Wash.	19	6	25

Note: Above prices are in tank trucks or iron barrels. For deliveries direct into airplane fuel tanks, 3c per gal. additional.

Naphtha Prices

Prices in Effect Jan. 29, 1934

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	†13.9	†15.9	15
Detroit	**17.4	**21	**18.5
Kansas City	14	15.5	16.3
Milwaukee	19.5	*21	21.8
Minneapolis	**19.8	**21.3	**22.1
St. Louis	14.7	16.2	17
New York	...	13	15
Boston	...	17	16
Philadelphia	...	15	16

*Includes 4c state tax.
**Includes 3c state tax. †Includes 0.2c cent to cover Illinois 2% sales tax.

Petroleum Spirits (Solvent)

Tank Cars (F.o.b. refinery or seaboard terminal)	
New York Harbor	9.5
Philadelphia district	9.5
Providence	9.5
Tank Wagon or Steel Barrels	
New York City	13
Syracuse	15
Rochester (net price)	15
Buffalo (net price)	14
Providence	14
Boston	17
Bridgeport	13.5
Newark	13
Philadelphia	13
Lancaster	17
Altoona	17
Baltimore	*14

Note: 2c off above t.w. prices to large buyers in some instances. *4c discount allowed on 200 gal. or more in Baltimore only, with 1c premium for steel barrels.

Heating Oil

Following are tank wagon prices of various grades of heating oil at the points shown in various territories. Prices are in cents per gallon:

Prices in Effect Jan. 29, 1934

	No. 1	No. 2	No. 3	No. 4
S. O. New Jersey				
Newark, N. J.	8.5	7	...	6.5
Atlantic City, N. J.	8.5	7	...	6.5
Baltimore, Md.	8.5	7	...	6.5
Washington, D. C.	8.75	7.25	...	6.75
S. O. New York				
New York City	8	7	7	6.5
Albany, N. Y.	8	7	...	...
Rochester, N. Y.	8	7	7	6.5
Boston, Mass.	8	7	7	6.5
Augusta, Me.	9	8	8	...
Manchester, N. H.	8.5	7	7	...
Burlington, Vt.	8.5	7.5	7.5	...
New Haven, Conn.	8	7	7	...
Providence, R. I.	8	7	7	6.5
Atlantic Refining				
Philadelphia, Pa.	8.5	7	6.5	6
Allentown, Pa.	8.5	7	7	6
Wilmington, Del.	8.5	7	7	6
Springfield, Mass.	8.5	7	...	6
Worcester, Mass.	8.5	7	...	6
Hartford, Conn.	8.5	7	...	6
S. O. Ohio				
Ohio Statewide	8	7.5	7	6.75

Note S. O. Ohio prices are for hose dumps; bucket dumps are 0.5c per gallon higher.

S. O. Indiana

Stanolex Fuel Oil No. 1

Chicago	8.25
Indianapolis, Ind.	*12.7
Detroit, Mich.	9
Madison, Wis.	8.4
Minneapolis, Minn.	8.9
Sioux City, Ia.	8.2
St. Louis, Mo.	7.2
Kansas City, Mo.	7.2

*Includes state tax of 4c.

Discounts: at Chicago, Indianapolis and Detroit, 1c off t.w. price for deliveries of 100 gals. and over; at other above points, 1c off t.w. price for deliveries 150 gals. and over.

California Oil and Gas Output is Lower

LOS ANGELES, Jan. 26.—California's oil output during 1933 was valued at $143,011,000, which represented 69.58 per cent of the total mineral output of the state for the year. These figures were based on a preliminary estimate issued by the state mining bureau, which placed the production of crude oil for the year at 173,334,000 barrels. Quantity of oil produced in 1933 was about 2 per cent less than in 1932, but value was approximately the same in both years.

Total amount of natural gas saved and utilized during the year was estimated at 257,200 m.c.f., with a value of $14,840,000.

Combined value of oil and gas was $157,891,000, or 76.8 per cent of the total value of all minerals produced by the state in 1933.

Dinner to Honor Abbott

DETROIT—A testimonial dinner for Horatio J. Abbott, head of the Abbott Gasoline Co., Ann Arbor, and Democratic National committeeman and collector of internal revenue in Michigan, was given recently by the Young Democratic Club.

Not Yours Truly

CLEVELAND, Jan. 29.—"Yours for LESS GOVERNMENTAL SPENDING" is the way the Charleston Oil Co., Charleston, S. C. signs its correspondence these days. T. Wilbur Thornhill is president.

Refiners' & Compounders' Supplies

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	Jan. 29	Jan. 22
Soda Ash light 58.. bags, cwt.	$1.23-1.50	$1.23-1.50
Silicate of Soda 60 deg. drums ..... cwt.	$1.75–1.90	$1.75–1.90
Silicate of Soda 40 deg. drums ..... cwt.	$0.70–1.00	$0.70–1.00
Sal Soda wks.....	$0.90–1.00	$0.90–1.00
Caustic Soda 76% solid..cwt.	$2.60	$2.60
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton.....	$11.00-12.50	$11.00-12.50
Sulfur, flowers of.....cwt.	$3.10–4.05	$3.10–4.05
Liquid Chlorine, tank cars, wks.....lb.	$1.85–$2.25	$1.85–$2.25

Compounders' Supplies

Vegetable Oils		
Linseed carloads, spot.....lb.	9.30	9.30
Tanks, spot.....	8.70	8.70
Soya Bean, Tank, coast....lb.	8.50	8.50
Oleic Acid		
Distilled, tanks.....lb.	6.00	6.00
Distilled, bbls.....lb.	6.875	6.875
Saponified, tanks.....lb.	6.25	6.25
Saponified, bbls.....lb.	7.00	7.00
Lard Oils		
Prime Winter Strained....lb.	9.50	9.50
Extra Winter Strained.....lb.	8.00	8.00
Extra No. 1.....lb.	7.50	7.50
No. 1.....lb.	7.00	7.00
No. 2.....lb.	6.50	6.50
Tallow oil.....lb.	7.25	7.25
Neatsfoot Oil		
Pure, bbls.....lb.	13.25	13.25
Extra, bbls.....lb.	7.75	7.75
No. 1 bbls.....lb.	7.50	7.50
Cold Pressed.....lb.	16.50	16.50
Naval Stores		
Steam distilled turpentine, N. Y.....gal.....	$47.00	$54.25
Steam distilled turpentine, Savannah.....gal.	49.00	49.25
Gum turpentine, N. Y....gal.	54.00	47.00
Gum turpentine, f.o.b. cars Savannah.....gal.	41.00	41.00
Wood Rosin, N. Y.....bbl.	$5.00	$4.90
Wood Rosin F, Savn'h...bbl.	$4.25	$4.25
Gum Rosin B, N. Y.....bbl.	$4.75	$4.90
Gum Rosin B, f.o.b. cars Savannah.....bbl.	$3.50	$3.65
Rosin oil, pure.....gal.	45	45
Rosin oil, compounded...gal.	46–48	46–48
Pine Tar		
Kiln burnt.....$11.00-$11.50	$11.00-$11.50	
Retort.....bbl. $12.50	$12.50	
Alcohol		
Denatured Formula 5, per gal., in bbls., car lots.....	35.1	35.1

S. O. Indiana Changes 3 Sales Managers

CHICAGO—Three changes in the sales organization of the Standard Oil Co. of Indiana are announced by Edward G. Seubert, president, in the current issue of the *Stanolind Record*, company house organ. They are:

H. A. Monson, manager at Des Moines, to manager at St. Joseph, Mo.

H. J. Bemis, manager at St. Joseph, to manage at Davenport, Iowa.

T. V. Warren, manager at Davenport, to manager at Des Moines.

LANSING, Mich.—L. D. Maxon, head of the Central Service Co. here, has returned to his office after a ten days illness.

WHICH CONTAINER PICTURES YOUR CANNED OIL CASES AT THE END OF THEIR JOURNEY?

The unretouched photograph illustrated above pictures clearly the results of an impartial test conducted on containers of similar railroad specifications but of *different* manufacture. Both containers were subjected to the same amount of rough handling. One container failed . . . the other was undamaged. Visible proof that canned oil cases require the extra margin of strength and safety found in Inland Containers.

The problem of determining the correct construction, materials and design of corrugated fibre boxes for canned oil has been thoroughly studied by Inland engineers. The results of these studies and findings are available to oil companies interested in the safe arrival of their products at destination.

Write for additional information.

INLAND CONTAINER CORPORATION

CORRUGATED FIBRE BOXES

GENERAL OFFICE—700 W. Morris St., INDIANAPOLIS, IND.

Plants in
Indianapolis, Ind. Middletown, Ohio Chicago, Illinois.

Inland Boxes Build Good Will

Complete Seaboard Markets

Prices on this page do not include federal tax levied on some products

Eastern Domestic Markets

(Prices for tank car and/or barge lots of 30,000 gallons, more or less, f.o.b. refinery or Seaboard terminal, representing majority of sales and quotations to jobbers and/or consumers. Florida and S. Carolina inspection tax not included.)

Prices—Jan. 29	Jan. 22	Jan. 15
U. S. MOTOR GASOLINE: 59 Octane and Below:		
New York harbor..... 5.50	5.50	5.50
Portland district..... 5.80	5.80	5.80
Boston district..... 5.70	5.70	5.70
Providence district..... 5.65	5.65	5.65
MOTOR GASOLINE: 60-64 Octane Number		
New York harbor..... 5.75	5.75	5.75
Portland district..... 6.05	6.05	6.05
Boston district..... 5.95	5.95	5.95
Providence district..... 5.90	5.90	5.90
Philadelphia district..... 5.75	6.00 – 6.25	6.00 –6.25
Baltimore district..... 5.75	5.75	5.75
Norfolk district..... 5.75	5.75	5.75
Wilmington, N. C..... 5.75	5.75	.....
Charleston district..... 5.75	5.75	5.75
Savannah district..... 5.75	5.75	5.75
Jacksonville district..... 5.75	5.75	5.75
MOTOR GASOLINE: 65 Octane Number and Above		
New York harbor..... 6.00	6.00	6.00
Portland district..... 6.30	6.30	6.30
Boston district..... 6.20	6.20	6.20
Providence district..... 6.15	6.15	6.15
Philadelphia district..... 6.00	6.25 – 6.50	6.25 –6.50
Baltimore district..... 6.00	6.00	6.00
Norfolk district..... 6.00	6.00	6.00
Wilmington, N. C..... 6.00	6.00	.....
Charleston district..... 6.00	6.00	6.00
Savannah district..... 6.00	6.00	6.00
Jacksonville district..... 6.00	6.00	6.00
AVIATION GASOLINE: Below 73 Octane Number		
New York harbor..... 8.50 – 9.50	8.50 – 9.50	8.50 – 9.50
Philadelphia..... 8.50 – 9.50	8.50 – 9.50	8.50 – 9.50
Baltimore..... 8.50 – 9.50	8.50 – 9.50	8.50 – 9.50
Boston..... 8.50 – 9.50	8.50 – 9.50	8.50 – 9.50
73 Octane Number and Above (Test basis 300° F.; 600 R.P.M.)		
New York harbor..... 11.00 –12.00	11.00 –12.00	11.00 –12.00
Philadelphia..... 11.00 –12.00	11.00 –12.00	11.00 –12.00
Baltimore..... 11.00 –12.00	11.00 –12.00	11.00 –12.00
Boston..... 11.00 –12.00	11.00 –12.00	11.00 –12.00
WATER WHITE KEROSINE		
New York harbor..... 5.25 – 5.50	5.25 – 5.50	5.25 – 5.50
Philadelphia district..... 5.50	5.50	5.50
Baltimore district..... 5.50	5.50	5.50
Norfolk district..... 5.50	5.50	5.50
Wilmington, N. C..... 5.50	5.50	.....
Charleston district..... 5.50	5.50	5.50
Boston district..... 5.25 – 5.50	5.25 – 5.50	5.25 – 5.50
Savannah district..... 5.50	5.50	5.50
Jacksonville district..... 5.50	5.50	5.50
Portland district..... 5.75	5.75	5.75
Providence district..... 5.50	5.50	5.50
HEATING OILS:		
New York harbor:		
Heating oil No. 1..... 5.25 – 5.50	5.25 – 5.50	5.25 – 5.50
Heating oil No. 2..... *4.50	*4.50	*4.50
Distillate oil No. 3..... 4.50	4.50	4.50
Industrial oil No. 4..... 3.75 – 4.00	3.75 – 4.00	3.75 – 4.00
*In barge lots, 0.25c off tank car price.		
Philadelphia district:		
Heating oil No. 1..... 5.50	5.50	5.50
Heating oil No. 2..... 4.50	4.50	4.50
Distillate oil No. 3..... 3.50 – 4.00	3.50 – 4.00	3.50 – 4.00
Industrial oil No. 4..... 3.50 – 4.00	3.50 – 4.00	3.50 – 4.00
Baltimore district:		
Heating oil No. 1..... 5.50	5.50	5.50
Heating oil No. 2..... 4.50	4.50	4.50
Distillate oil No. 3..... 4.50	4.50	4.50
Industrial oil No. 4..... 4.00	4.00	4.00
Boston district:		
Heating oil No. 1..... 5.25 – 5.50	5.25 – 5.50	5.25 – 5.50
Heating oil No. 2..... 4.50	4.50	4.50
Distillate oil No. 3..... 4.50	4.50	4.50
Industrial oil No. 4..... 4.00	4.00	4.00

Prices—Jan. 29	Bunker Oil Grade C	†Diesel Oil Ships' Bunkers	Gas Oil 28-34 Gravity
New York harbor.....	*$1.20	*$1.95	4.00
Philadelphia district.....	*$1.20	*$1.95	4.00
Baltimore district.....	*$1.20	*$1.95	4.00
Norfolk district.....	*$1.20	*$1.95	....
Charleston district.....	$1.15	$1.95	....
Savannah district.....	$1.15	$1.95	....
Jacksonville district.....	*$1.15	$1.95	....
Portland district.....	$1.30	$2.05	....
Boston district.....	*$1.20	*$1.95	....
Providence district.....	$1.20	$1.95	....

*Lighterage for bunker oil, 5c per bbl. additional; for Diesel oil, 6.5c per bbl. additional. †Diesel oil at New York, Savannah and Jacksonville shore plants is 4.50c per gal.

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

53-55 U. S. Motor.....	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75
400 e.p. blend 65 Octane and above.....	4.75 – 5.25	4.75 – 5.25	4.75 – 5.25
Gas oil, 30-34 per bbl.....	$0.95 –$1.05	$0.95 –$1.05	$0.95 –$1.05
Diesel oil, 27 plus, per bbl.	$1.05 –$1.15	$1.05 –$1.15	$1.05 –$1.15
Grade C bunker oil, for ships bunkers, per bbl.	$0.825–$0.85	$0.825–$0.85	$0.825–$0.85
Grade C bunker oil, in cargoes, per bbl.....	$0.63 –$0.67	$0.63 –$0.67	$0.63 –$0.67
38-40, w.w. kero., 150 fire	4.50 – 4.75	4.50 – 4.75	4.50 – 4.75
Cased Goods			
Gasoline, U. S. Motor....	$1.45 –$1.60	$1.45 –$1.60	$1.45 –$1.60
Gasoline, 400 e.p. blend..	$1.55 –$1.70	$1.55 –$1.70	$1.55 –$1.70
38-40 w.w. kero., 150 fire	$1.15 –$1.25	$1.15 –$1.25	$1.15 –$1.25
Kerosine, prime white....	$1.05 –$1.10	$1.05 –$1.10	$1.05 –$1.10

New York Export Markets

(Prices in cents per gallon in barrels, F. a. s. New York)

CYLINDER OILS (Pennsylvania Products)

	Jan. 29	Jan. 22	Jan. 15
Bright stock, No. 8 color	34.00 –34.50	34.00 –34.50	31.00 –31.50
Bright stock, No. 6½ color diluted.....	33.00 –33.50	33.00 –33.50	30.00 –30.50
Neutral 200 No. 3 color	33.50 –34.50	33.00 –33.50	29.50 –30.00
Neutral 150 No. 3 color	27.50 –28.00	27.00 –27.50	25.50 –26.00
600 Warren E filtered....	27.50 –28.50	27.00 –27.50	25.50 –26.00
600 stm. refd. unfiltered..	25.50 –26.00	25.00 –25.50	23.00 –23.50
650 stm. refd. unfiltered..	27.50 –28.00	27.00 –27.50	25.00 –25.50
600 flash, steam refined..	28.50 –30.00	28.00 –28.50	26.00 –26.50
630 flash, steam refined...	32.50 –33.00	30.00 –30.50	30.00 –30.50

Wax Market

(Prices in cents per pound. Tests made by A. S. T. M. method with melting points converted into A. M. P. by adding 3° F. Export prices are f.a.s. carload lots. Domestic prices are f.o.b. refineries in New York and New Orleans harbor district, in bags, carload lots, with 0.2c discount allowed for shipment in bulk).

Prices—Jan. 29	New York Domestic	New York Export	New Orleans Domestic	New Orleans Export
124-6 Y.C. scale.....	3.875	3.875	3.875	3.875
122-4 W.C. scale....	4.00	4.00	4.00	4.00
124-6 W.C. scale...	4.00	4.00	4.00	4.00
123-5 Fully refined...	4.45	4.375– 4.625	4.45	4.375– 4.625
125-7 Fully refined...	4.55	4.50 – 4.75	4.55	4.50 – 4.75
128-30 Fully refined..	4.80	4.75 – 5.00	4.80	4.75 – 5.00
130-2 Fully refined...	4.95	5.00 – 5.25	4.95	5.00 – 5.25
133-5 Fully refined...	5.55	5.50 – 5.75	5.55	5.50 – 5.75
135-7 Fully refined...	5.80	5.75 – 6.00	....	....

Gulf Coast Bulk Market

(Prices are f. o. b. Gulf oil terminals representing sellers' opinions except prices specified to the contrary. Prices cover bulk shipments of 20,000 barrels or more, unless otherwise noted.)

	Jan. 29	Jan. 22	Jan. 15
MOTOR GASOLINE: For Domestic Shipment			
59 octane and below....	5.00 – 5.125	4.875	4.875– 5.00
60-64 octane number....	5.125– 5.25	5.125	5.125– 5.375
65 octane and above...	5.375– 5.50	5.375	5.375– 5.50
FURNACE OILS			
No. 1 Heating oil.....	4.25 – 4.375	4.25 – 4.375	4.25 – 4.375
No. 2 Heating oil.....	3.50 – 3.75	3.50 – 3.75	3.50 – 3.75
KEROSINE			
41-43 w.w.....	4.25 – 4.50	4.50 – 4.625	4.50 – 4.625
For Export Shipment			
GASOLINE			
U. S. Motor gasoline.....	5.00 – 5.125	5.00	5.00 – 5.125
60-62, 400 e.p. gasoline...	5.125– 5.25	5.125	5.125– 5.25
61-63, 390 e.p. gasoline...	5.25 – 5.375	5.25	5.25 – 5.50
64-66, 375 e.p. gasoline...	5.25 – 5.375	5.50	5.50 – 5.625
U. S. Motor, cases (cargoes).....	$1.30 –$1.35	$1.30 –$1.35	$1.30 –$1.35
64-66, 375 e.p. cases (cargoes).....	$1.40 –$1.45	$1.40 –$1.45	$1.40 –$1.45
KEROSINE			
44 water white.....	4.375– 4.50	4.375– 4.50	4.375– 4.50
41-43 water white.....	4.25 – 4.375	4.25 – 4.375	4.25 – 4.375
41-43 prime white.....	4.125– 4.25	4.125– 4.25	4.125– 4.25
W.W., cases (cargoes)....	$1.25 –$1.30	$1.25 –$1.30	$1.25 –$1.30
P.W., cases (cargoes)....	$1.20 –$1.25	$1.20 –$1.25	$1.20 –$1.25
†Represents sales only.			
For Domestic and/or Export Shipment			
GAS and BUNKER OILS			
*26-30 translucent gas oil	3.50	3.50	3.50
*30 plus translucent gas oil	3.75	3.75	3.75
Diesel Oil ships' bunkers	†$1.80	†$1.80	†$1.80
Grade C bunker oil, for ships' bunkers, per bbl.	†$1.05	†$1.05	†$1.05
Grade C bunker oil, per bbl. in cargoes.....	$0.90 –$0.95	**$0.90–$0.95	**$0.90–$0.95

*Less than ½ of 1% sulphur. †Lighterage 5c per bbl. additional. **Nominal.

MEXICAN CRUDE AND BUNKER OILS (f.o.b. Steamer, Tampico)

Heavy Panuco crude taxes to be paid, per bbl.....	$0.80	$0.75 –$0.80	$0.75 –$0.80
Grade C for bunkering, taxes paid, per bbl.....	$1.05	$1.05	$1.05

SOUTH TEXAS LUBRICATING OILS (Viscosity at 100° F. cold test 0 (Tanker, f. o. b. Gulf oil terminals.)

100 vis. No. 3 unfilt. pale	5.50 – 6.00	5.50 – 6.00	6.25
200 vis. No. 3 unfilt. pale	6.375– 7.00	6.375– 7.00	7.50
300 vis. No. 3 unfilt. pale	7.00 – 7.50	7.00 – 7.50	8.00
500 vis. No. 3½ unfilt. pale	7.875– 8.50	7.875– 8.50	9.00
750 vis. No. 4 unfilt. pale	8.75 – 9.50	8.75 – 9.50	9.50
1200 vis. No. 4 unfilt. pale	9.25 –10.00	9.25 –10.00	10.00
2000 vis. No. 4 unfilt. pale	9.50 –10.25	9.50 –10.25	10.25
100 vis. No. 5-6 red oil..	5.50 – 6.00	5.50 – 6.00	6.25
200 vis. No. 5-6 red oil....	6.125– 6.75	6.125– 6.75	7.50
300 vis. No. 5-6 red oil....	6.375– 6.75	6.375– 6.75	8.00
500 vis. No. 5-6 red oil....	7.625– 8.00	7.625– 8.00	9.00
750 vis. No. 5-6 red oil....	9.00 – 9.50	9.00 – 9.50	9.50
1200 vis. No. 5-6 red oil..	9.25 – 9.75	9.25 – 9.75	10.00
2000 vis. No. 5-6 red oil..	9.75 –10.25	9.75 –10.25	10.25

Note: Red oil prices shown above cover oils with green cast; blue cast red oils are slightly lower in some cases.

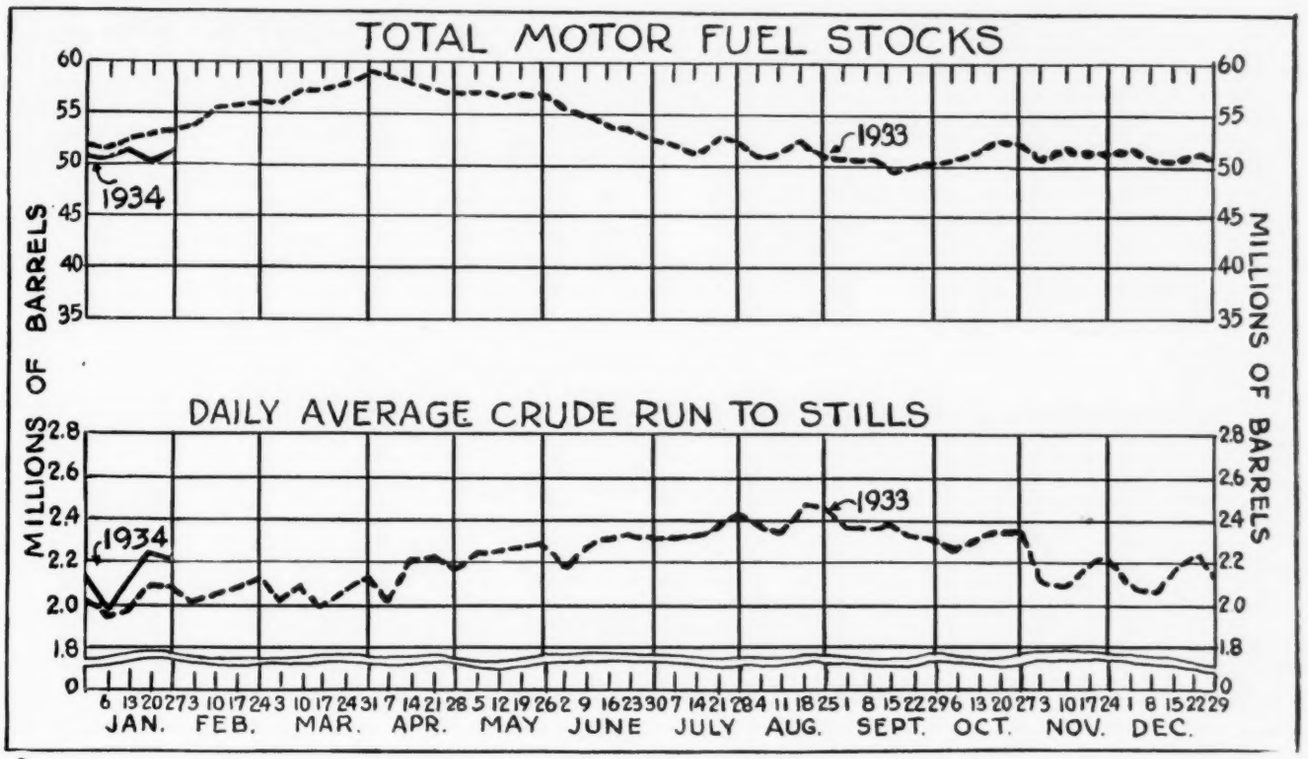
Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to U. S. ports, cents per barrel)

Rates Jan. 29	Crude &/or Fuel Last Paid	Crude &/or Fuel Owners Ask	Refined Oil &/or Spirits Last Paid	Refined Oil &/or Spirits Owners Ask
Calif-U.K./Continent*..	12/6	15/-17/	13/6	15/-17/
Gulf-U.K./Continent*...	8/1.5	8/6-9/6	8/9	8/9-9/6
Calif-N. Atlantic..... (not E. of N. Y.)	55c	55c–60c	55c	55c-60
Gulf-N. Atlantic**..... (not E. of N. Y.)	19c	19-21c	21c	21c-22c

*Continental ports in range between Bordeaux and Hamburg, both inclusive. **Venezuela loading same rate; Tampico 2 to 3c per bbl. additional.

U. S. Crude Runs and Gasoline Stocks as Reported Weekly by A. P. I.



Bulk Motor Fuel Stocks Increase 219,000 Barrels

By Telegraph

NEW YORK, Jan. 30

BULK stocks of motor fuel were increased 219,000 barrels to 50,229,000 barrels in the week ended Jan. 27 according to reports gathered by the American Petroleum Institute.

Stocks at refineries increased 95,000 barrels to 27,703,000 barrels. In transit and terminal stocks rose 74,000 to 19,226,000 barrels and other motor fuel stocks rose 50,000 barrels to 3,300,000 barrels.

Crude runs to stills were reduced 37,000 barrels daily average to 2,219,000 barrels from the high level reached by reporting plants in the third week of the month. Operations during the week were at 66.4 per cent of capacity as compared with 67.5 per cent in the week ended Jan. 20.

Indiana-Illinois refiners increased their crude runs to stills 37,000 barrels daily average during the past week but still were operating at a considerably lower rate than East Coast and Texas Gulf Coast refiners. Indiana-Illinois refiners were utilizing 72.7 per cent of their still capacity, East coast 82 per cent and Texas Gulf refiners 83.4 per cent despite a cut of 39,000 barrels in crude runs.

In California bulk motor fuel stocks were reduced 394,000 barrels during the week in addition to a transfer in the previous week of 1,672,000 barrels from gasoline to unfinished oil storage. Texas gulf refiners reduced motor fuel stocks 171,000 barrels. East Coast and Indiana-Illinois groups each increased motor fuel stocks more than 200,000 barrels.

Gas and fuel oil stocks were reduced 742,000 barrels during the week to 115,097,000 barrels.

Current Refinery Operations

Districts	Per Cent Capacity Reporting	Daily Average Crude to Stills (Barrels) Week Ended		Per Cent of Reporting Capacity Operated Week Ended		Stocks (Thousands of Barrels) Total Motor Fuel		Gas & Fuel Oil		Cracked % Total Capacity Reporting	Gasoline Production Daily Av. Production (Barrels) Week Ended	
		Jan. 27	Jan. 20	Jan. 27	Jan. 20	Jan. 27	Jan. 20	Jan. 27	Jan. 20		Jan. 27	Jan. 20
East Coast	100.0	477,000	481,000	82.0	82.6	13,934	13,693	5,473	5,694	95.0	74,000	80,000
Appalachian	92.6	88,000	86,000	63.0	61.6	1,933	1,941	913	860	100.0	21,000	23,000
Ind., Ill., Ky.	97.3	309,000	272,000	72.7	64.0	7,678	7,448	4,237	4,222	94.7	95,000	92,000
Okla., Kans., Mo.	82.1	219,000	219,000	57.7	57.7	5,684	5,645	3,439	3,444	91.5	52,000	52,000
Inland Texas	60.2	87,000	85,000	52.7	51.5	1,204	1,218	1,610	1,634	80.2	19,000	23,000
Texas Gulf	98.1	440,000	479,000	83.4	90.8	5,379	5,550	5,593	5,632	97.3	89,000	97,000
La. Gulf	100.0	108,000	110,000	66.7	67.9	1,706	1,445	1,920	1,997	100.0	22,000	20,000
No. La., Ark.	92.6	51,000	53,000	66.7	69.3	229	197	536	526	92.8	8,000	4,000
Rocky Mt.	78.8	26,000	35,000	40.9	55.3	990	987	715	712	92.8	11,000	8,000
California	96.9	414,000	436,000	50.4	53.1	11,492	11,886	90,661	91,118	100.0	39,000	36,000
TOTAL	92.4	2,219,000	2,256,000	66.4	67.5	50,229	50,010	115,097	115,839	95.1	430,000	435,000

Crude Oil Prices (in Effect Jan. 29, 1934)

Crude prices for the whole year in OIL PRICE HANDBOOK published annually
(Prices are per barrel of 42 U. S. Gallons at the well; A. P. I. Gravity)

EASTERN FIELDS

Posted by Joseph Seep Purchasing Agency

Penna. Grade Oil in Southwest Penna. Pipe Lines (Oct. 4, 1933).....$2.12
Penna. Grade Oil in Eureka Pipe Lines (West Virginia) (Oct. 4, 1933).....$2.07
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O.) (Jan. 29, 1934).....†$1.97
Corning Oil in Buckeye Pipe Lines (Ohio) (Oct. 2, 1933).....$1.32

†For Macksburg oil run previous to March 1, 1932, $1.92 effective Jan. 29, 1934.

Posted by Other Companies

Tide Water Pipe Co., Ltd.: Bradford-Alleghany district (Penna. and N. Y.) (Effective Oct. 4, 1933).....$2.45
The Pennzoil Co.: (Effective Oct. 4, 1933) Penna. Grade Oil in National Transit Lines$2.37
Ashland Oil & Transportation Co.: (Effective Sept. 10, 1933):
Somerset Oil in Ashland Lines (Ky.).....†$1.23

*The Pennzoil Co. posts $2.37 in Cochran, Franklin, Hamilton and Doolittle, Pa. fields; prices in their districts range down to $2.32 per bbl. at wells.

†Somerset price includes 15c premium.

MICHIGAN

(Posted by Pure Oil Co.)

Midland, Midland County (Sept. 30, 1933)..$1.02

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

(Effective Sept. 29, 1933)

Lima.....$1.30	West. Kentucky $1.18

(Effective Jan. 5, 1934)

Princeton.....$1.13	Illinois.....$1.13

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Western Ontario

(Effective 7 a. m. Sept. 9, 1933)

Petrolia.....$2.10
Oil Springs.....$2.17

Alberta

Turner Valley

(Effective 7 a.m. Dec. 9, 1933; prices f.o.b. field tankage)

Crude	Naphtha:
40-44.9.....$1.50	
45-45.9..... 2.07	†Clear.....$3.15
50 and above.... 2.66	†Discolored..... 2.91

†Clear naphtha: 22 color; 10 lbs. vapor pressure, Reid method; 90% recovery; end point, 410°. Discolored naphtha: same specifications as for clear naphtha except color.

MID-CONTINENT

Prices of Stanolind Crude Oil Purchasing Co.

(Effective 7 a.m. Sept. 29, 1933)

(In Oklahoma-Kansas)	(In North-North Central Texas)
Below 29.....$0.84	$0.79
29-29.9..... 0.86	0.81
30-30.9..... 0.88	0.83
31-31.9..... 0.90	0.85
32-32.9..... 0.92	0.87
33-33.9..... 0.94	0.89
34-34.9..... 0.96	0.91
35-35.9..... 0.98	0.93
36-36.9..... 1.00	0.95
37-37.9..... 1.02	0.97
38-38.9..... 1.04	0.99
39-39.9..... 1.06	1.01
40 and above..... 1.08	1.03

Above Stanolind prices met as follows:

Sept. 29, by The Texas Co. in Oklahoma, and in North and North Central Texas; Continental Oil in all three states; by Empire, White Eagle and Gypsy (Gulf).

See also Carter Oil, Magnolia, Humble schedules below and footnotes under Carter table.

Prices of Carter Oil Co.

(In Oklahoma and Kansas)

(Effective 7 a.m. Sept. 29, 1933)

Below 25.....$0.76	33-33.9.....$0.94
25-25.9..... 0.78	34-34.9..... 0.96
26-26.9..... 0.80	35-35.9..... 0.98
27-27.9..... 0.82	36-36.9..... 1.00
28-28.9..... 0.84	37-37.9..... 1.02
29-29.9..... 0.86	38-38.9..... 1.04
30-30.9..... 0.88	39-39.9..... 1.06
31-31.9..... 0.90	40 and above... 1.08
32-32.9..... 0.92	

Sept. 29, Carter gravity and price schedule met in Oklahoma-Kansas by Sinclair-Prairie, and Humble price schedule met in North-North Central Texas except that Sinclair-Prairie posts five lower grades down to below 25, with 2c differential for each. Same day, Shell Petroleum met Carter in full in Oklahoma-Kansas.

Prices in Magnolia Petroleum Co.

(Effective 7 a.m. Sept. 29, 1933)

In Oklahoma, same schedule as Carter Oil, which see above, beginning with below 25, at $0.76 and ending with 40 & above, at $1.08.

In Texas: North and North Central, including Burkburnett, Archer, Stephens, Henrietta, Electra, Comanche and Olden; and in Central Texas, including Mexia, Wortham, and Panola county, same gravity and price schedule as Stanolind in Texas, which see below, beginning with below 29 at $0.79, and ending with 40 & above, at $1.03.

MID-CONTINENT (Continued)

Prices of Humble Oil & Refining Co.

(*In North, North Central and Central Texas)

(Effective 7 a.m. Sept. 29, 1933)

Below 29.....	$0.79	35-35.9.....	$0.93
29-29.9.....	0.81	36-36.9.....	0.95
30-30.9.....	0.83	37-37.9.....	0.97
31-31.9.....	0.85	38-38.9.....	0.99
32-32.9.....	0.87	39-39.9.....	1.01
33-33.9.....	0.89	40 and above...	1.03
34-34.9.....	0.91		

*Including North Texas, Ranger, Mexia, Powell, Boggy Creek, Richland, Wortham, Currie and Moran fields.

PANHANDLE TEXAS

Humble Oil & Refining Co.

(Effective 7 a.m. Sept. 29, 1933)

	Gray County	Carson-Hutchinson
Below 35.....	$0.79	$0.69
35-35.9.....	0.81	0.71
36-36.9.....	0.83	0.73
37-37.9.....	0.85	0.75
38-38.9.....	0.87	0.77
39-39.9.....	0.89	0.79
40 & above.....	0.91	0.81

Sept. 29, above prices met by Sinclair-Prairie, Magnolia and The Texas Co. in the entire area, also by Continental Oil in Carson-Hutchinson.

EAST TEXAS

(Effective 7 a.m. Sept. 29, 1933)

Stanolind, Humble, Sinclair-Prairie, Texas and Magnolia.....$1.00

WEST TEXAS and NEW MEXICO

Humble Oil & Refining Co.

(Effective 7 a.m. Sept. 29, 1933)

Ector, Pecos and Winkler Counties, W. Texas, and Lea Co., N. M.....$0.75
Crane, Upton, Crockett, Howard and Glasscock county, W. Tex.....$0.70

Sept. 29, Magnolia met in Crane, Upton, Howard, Glasscock, Mitchell and Winkler. Sept. 29, Texas Co. met Humble in Winkler, Crane, Upton and Lea counties; Stanolind Oil & Gas met in Hendrich field, Winkler county and posted in Marion county, Tex. below 25 at $0.63, plus 2c differential to 40 & above at $0.95.

SOUTH and SOUTHWEST TEXAS

(Posted by Humble Oil & Refining Co.)

(Effective 7 a.m. Sept. 29, 1933)

Darst Creek.....$0.87		Mirando.....$0.80	
Salt Flat..... 0.87		Pettus..... 1.05	
Saxet..... 0.85		Tomball..... 1.15	

Sept. 30, The Texas Co. met Humble in Darst Creek. On Sept. 29 it posted $0.80 in Duval county, and $0.85 in Saxet-Greta.

(Continued on page 98)

CALIFORNIA CRUDE

Standard Oil Co. of California

(All gravities above those quoted take highest price offered in the field)
Effective 7 a. m. Sept. 6, 1933

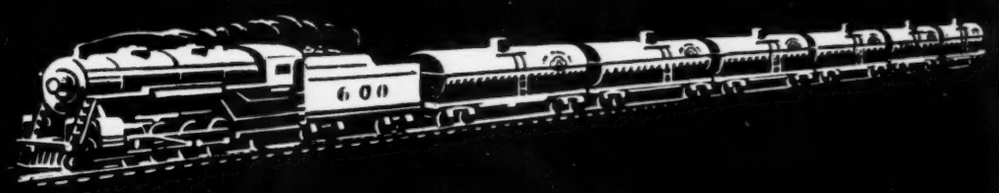
Gravity	Signal Hill	Seal Beach Alamitos Heights	Huntington Beach	Inglewood	Playa Del Rey	Olinda-Brea Canon	Athens-Rosecrans Dominguez	Elwood Terrace	Torrance	Richfield	Whittier La Habra	Montebello	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway Sunset Elk Hills Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge	Santa Paula (Union Oil Co.)	Orcutt (Union Oil Co.)
14-14.9.....	$0.65	$0.65	$0.65	$0.65	$0.65	$0.65	....	....	$0.65	$0.65	$0.65	$0.65	$0.65	....	$0.57	$0.57	$0.57	$0.57	$0.57	$0.57	....
15-15.9.....	.65	.65	.69	.69	.66	.69	....	....	.66	.65	.65	.65	.65	....	.57	.57	.57	.57	.57	.57	....
16-16.9.....	.66	.65	.72	.73	.69	.73	....	....	.69	.67	.68	.65	.65	....	.57	.57	.57	.57	.57	.57	$0.57
17-17.9.....	.69	.65	.75	.76	.73	.76	....	....	.72	.70	.71	.65	.68	....	.57	.57	.57	.57	.57	.57	.57
18-18.9.....	.72	.65	.78	.80	.76	.79	....		.75	.74	.74	.65	.71	....	.57	.61	.61	.59	.58	.60	.61
19-19.9.....	.75	.65	.81	.83	.80	.82	....		.78	.78	.78	.65	.74	....	.57	.64	.65	.62	.61	.63	.64
20-20.9.....	.78	.68	.83	.87	.83	.85	....		.81	.82	.81	.66	.78	....	....	.67	.69	.65	.64	.66	.67
21-21.9.....	.81	.72	.86	.90	.87	.88	....		.83	.85	.85	.69	.81	$0.72	....	.70	.73	.68	.67	.69	.70
22-22.9.....	.84	.76	.89	.94	.90	.92	....		.86	.89	.87	.72	.84	.76	....	.73	.76	.72	.70	.72	.73
23-23.9.....	.88	.81	.92	.97	.94	.95	$0.83		.89	.93	.90	.76	.87	.79	....	.77	.79	.75	.73	.75	.77
24-24.9.....	.91	.85	.95	1.01	.97	.98	.86		.92	.97	.93	.80	.90	.83	....	.81	.82	.78	.76	.78	.81
25-25.9.....	.94	.89	.98	....	1.00	1.01	.90	....	.95	1.00	....	.85	.93	.87	....	.85	.85	.81	.79	.81	.85
26-26.9.....	.97	.93	1.01	....	1.04	1.04	.94	....	.98	1.04	....	.89	.96	.90	....	.89	.88	....	....	.84	.89
27-27.9.....	1.00	.98	1.04	....		1.07	.97	....	....	1.08	....	....	.99	.94	....	.93	.91	....	....	.88	....
28-28.9.....	1.03	1.02	1.07	....		1.10	1.01	....	....	1.11	....	....	1.02	.98	....	.97	.94	....	....	.92	....
29-29.9.....	1.06	1.06	1.09	....		....	1.04	....	....	1.15	....	....	1.05	1.01	....	1.01	.97	....	....	.96	....
30-30.9.....	1.09	1.10	1.12	....		....	1.08	....	....				1.09	1.05	....	1.05	1.00	....	....	1.00	....
31-31.9.....	....	....	....	....		....	1.12	....	....				1.12	1.08	....	1.09	....	....	....	....	....
32-32.9.....	....	....	....	....		....	1.15	....	....	Kettleman Hills			1.15	1.12	....	1.13	....	....	....	....	....
33-33.9.....	....	....	....	....		....	....	$1.03	....	$0.93			1.18	1.16	....	1.17	....	....	....	....	....
34-34.9.....	....	....	....	....		....	....	1.06	....	.96			1.21	1.19	....	....	....	....	....	....	....
35-35.9.....	....	....	....	....		....	....	1.09	....	.99			....	1.23	....	....	....	....	....	....	....
36-36.9.....	....	....	....	....		....	....	1.12	....	1.02			....	1.26	....	....	....	....	....	....	....
37-37.9.....	....	....	....	....		....	....	1.15	....	1.05			....	1.30	....	....	....	....	....	....	....
38-38.9.....	....	....	....	....		....	....	....	....	1.08			....	1.34	....	....	....	....	....	....	....
39-39.9.....	....	....	....	....		....	....	....	....	1.11			....	....	....	....	....	....	....	....	....

Subject to Field Gathering Charge of 5c per Bbl.

(Crude Oil Prices continued on page 98)

From a can of cup grease

...to a trainload of gasolene



Cities Service can supply it!

Whatever your petroleum requirements may be, no matter how rigid your specifications—Cities Service can meet them. Whether you need a highly refined aero lubricant or ordinary black oil, a fluid grease or a hard cup grease, water-white kerosene or cleaners' naphtha, straight-run gasolene or cracked; high octane rating or low—Cities Service is prepared to supply you. Cities Service subsidiaries are a complete unit in the oil industry. They own more than 6000 producing oil wells located in most of the major oil fields in the United States and Mexico; 8 refineries, 14 tank ships, 3500 tank cars and many miles of pipe lines. When you make up your next bid list, be sure to include Cities Service, because Cities Service products are dependable—they represent 72 years of active experience and research in the oil industry—they are backed by the entire resources of the Cities Service organization—one of the nation's few billion dollar industrial enterprises. Cities Service products are the type of products that develop and hold consumer satisfaction—and that means more profit to you. For further information write to Cities Service, 60 Wall Street, New York City, or to the nearest subsidiary listed below.

Cities Service Petroleum Products are available through the following subsidiaries and refineries:

Headquarters	
CITIES SERVICE OIL COMPANY, LTD.	Toronto, Ont., Canada
CITIES SERVICE OIL COMPANY (Michigan)	Adrian, Michigan
CITIES SERVICE OIL COMPANY (Ohio)	Cleveland, Ohio
CITIES SERVICE OIL COMPANY (Delaware)	Tulsa, Okla.
CITIES SERVICE REFINING COMPANY	Boston, Mass.
CITIES SERVICE OIL COMPANY OF WIS.	Milwaukee, Wis.
CREW LEVICK COMPANY	Philadelphia, Pa.
EMPIRE OIL AND REFINING COMPANY	Tulsa, Okla.
A. R. NEWCOMBE OIL COMPANY	Kingston, N. Y.

Headquarters	
LOUISIANA OIL REFINING CORP. (LORECO petroleum products)	**SHREVEPORT, LA.**
Refineries	
CITIES SERVICE REFINING COMPANY	East Braintree, Mass.
CREW LEVICK COMPANY	Petty Island, N. J.—Titusville, Pa.
EMPIRE OIL AND REFINING COMPANY	Ponca City, Okla.—Okmulgee, Okla. Gainesville, Texas—East Chicago, Ind.
LOUISIANA OIL REFINING CORP. (LORECO petroleum products)	**SHREVEPORT, LA.**

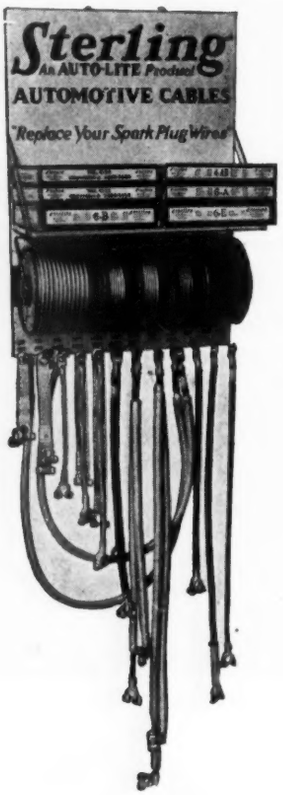
CITIES SERVICE OILS

ONCE - ALWAYS

The "Empire group" is the common designation for a number of Cities Service oil subsidiaries occupying an important position in the petroleum industry in the great Mid-Continent field of the United States. Companies in this group include Empire Oil & Refining Co., Indian Territory Illuminating Oil Co., Empire Pipe Line Co., and Cities Service Oil Co. Through these and other companies, Empire produces, transports, refines and markets a complete line of petroleum products.

Cities Service Oils and Gasolene

MAKE THIS EXTRA MONEY



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Sterling has a new proposition for increasing your business. Many service stations are making extra profits from the sale of Sterling Battery Cables. Let us send you complete information. Write us today, or send in the coupon. Get the facts about this extra profit opportunity.

STERLING CABLE CORP.,
Port Huron, Mich.

Please send us facts about Sterling Battery Cables.

Name.....

Address.....

City..... State.....

Crude Oil Prices (In Effect January 29, 1934)

(Continued from page 96)

SOUTH TEXAS (Continued)

Oct. 2, Magnolia posted $0.87 in Darst Creek and $1.15 in Tomball; Sept. 29 it posted $0.80 in Mirando, $0.75 in Luling and $0.95 in Lytton Springs.

Jan. 11, 1934 Magnolia posted $1.00 for Cleveland, Liberty county, Tex.

Humble

Conroe (Montgomery Co., Tex.)
(Effective 7 a. m. Sept. 29, 1933)

35-35.9	$1.09	38-38.9	$1.15
36-36.9	1.11	39-39.9	1.17
37-37.9	1.13	40 & above	1.19

Sept. 30 Texas Co. met above prices.

NORTH LOUISIANA-ARKANSAS

Prices of Standard Oil Co. of Louisiana
(Effective 7 a. m. Sept. 29, 1933)

	Caddo	Homer	Haynesville
Below 25	$0.63	$0.71	$0.65
25-25.9	0.65	0.73	0.67
26-26.9	0.67	0.75	0.69
27-27.9	0.69	0.77	0.71
28-28.9	0.71	0.79	0.73
29-29.9	0.73	0.81	0.75
30-30.9	0.75	0.83	0.77
31-31.9	0.77	0.85	0.79
32-32.9	0.79	0.87	0.81
33-33.9	0.81	0.89	0.83
34-34.9	0.83	0.91	0.85
35-35.9	0.85	0.93	0.87
36-36.9	0.87	0.95	0.89
37-37.9	0.89	0.97	0.91
38-38.9	0.91	0.99	0.93
39-39.9	0.93	1.01	0.95
40 and above	0.95	1.03	0.97

	Sabine De Soto	Sarepta Carterville El Dorado	Miller County Ark.
Below 25	$0.69	$0.75	$0.62
25-25.9	0.71	0.77	0.64
26-26.9	0.73	0.79	0.66
27-27.9	0.75	0.81	0.68
28-28.9	0.77	0.83	0.70
29-29.9	0.79	0.85	0.72
30-30.9	0.81	0.87	0.74
31-31.9	0.83	0.89	0.76
32-32.9	0.85	0.91	0.78
33-33.9	0.87	0.93	0.80
34-34.9	0.89	0.95	0.82
35-35.9	0.91	0.97	0.84
36-36.9	0.93	0.99	0.86
37-37.9	0.95	1.01	0.88
38-38.9	0.97	1.03	0.90
39-39.9	0.99	1.05	0.92
40 and above	1.01	1.07	0.94

Smackover, Ark	$0.70
Nevada, Ark	0.60
Urania, La. (La. Oil Refg. Co., Jan. 1, '34)	0.87

Above prices met as follows:

Sept. 29, Stanolind Oil & Gas Co. met in Caddo.

Sept. 29, The Texas Co. posted North Louisiana at $0.79 for below 29, plus 2c differential, to top grade of 40 and above at $1.03. It posted Smackover at $0.70.

Sept. 29, by Louisiana Oil Refining Co. in Caddo, Homer, Haynesville, same gravity and price schedule as S. O. La.; also met in Smackover; posted for Cotton Valley, below 25 at $0.70, plus 2c differential to top grade of 40 & above, at $1.02.

Sept. 29, Magnolia Petroleum Co. posted in Pine Island, Haynesville, Bull Bayou, Cotton Valley, La. and El Dorado light and Rainbow, Ark., below 29 at $0.79, plus 2c differential, to top grade of 40 & above, at $1.03 for El Dorado East field and Smackover, $0.70; Oct. 2, for Lockport, La., below 20, $0.82, plus 2c differential, to top grade of 34 & above at $1.12; for Iowa, La. and Cameron-Meadow, in Cameron parish, La., below 20 at $0.72, plus 2c differential, to top grade of 34 and above, at $1.02.

Sept. 29, Gulf Refining Co. met Texas Co. in Caddo, Homer, Haynesville, Bull Bayou, Crichton, De Soto and El Dorado, posting below 29 gravity, at $0.79, plus 2c differential, to top grade of 40 & above, at $1.03; also posted Smackover at $0.70.

*GULF COASTAL

Posted by Humble Oil & Refining Co.
(Effective 7 a. m. Sept. 29, 1933)

Below 20	$0.82	27-27.9	$0.98
20-20.9	0.84	28-28.9	1.00
21-21.9	0.86	29-29.8	1.02
22-22.9	0.88	30-30.9	1.04
23-23.9	0.90	31-31.9	1.06
24-24.9	0.92	32-32.9	1.08
25-25.9	0.94	33-33.9	1.10
26-26.9	0.96	34 and above	1.12
Refugio heavy			$0.85

*Includes these fields: Barbers Hill, Goose Creek, Hull, Humble, Liberty, Moss Bluff, Orange, Pierce Junction, Rabbs Ridge, Raccoon Bend, Refugio light, Sour Lake, Spindletop, Sugarland and West Columbia.

Above prices met Sept. 29 by Sinclair-Prairie and Sun Pipe Line Co.

GULF COASTAL—(Continued)

The Texas Co.
(Effective 7 a. m. Sept. 30, 1933)

Same gravity and price schedule as Humble up to 30-30.9 gravity, which see; plus these grades:

30-30.9	$1.04	36-36.9	$1.10
31-31.9	1.05	37-37.9	1.11
32-32.9	1.06	38-38.9	1.12
33-33.9	1.07	39-39.9	1.13
34-34.9	1.08	40 and above	1.14
35-35.9	1.09		

ROCKY MOUNTAIN FIELDS

Posted by Stanolind Oil & Gas Co.
(Effective 7 a. m. Sept. 29, 1933)

Salt Creek and Dutton Creek, Wyo. Same schedule as Stanolind posts in Oklahoma-Kansas which see on first crude price page.

Elk Basin, light	$1.18
Grass Creek, light	1.18
Greybull-Torchlight	1.18
Iles, light, Col	0.96
Iles Heavy	0.90
Hogback, N. M.	1.11
Frannie light	0.87
Frannie heavy	0.62

Posted by Ohio Oil Co.
(Effective 7 a. m. Sept. 29, 1933)

Elk Basin, Wyo.	$1.18
Grass Creek, Light	1.18
Rock Creek	1.02
Big Muddy	1.01
Sunburst, Mont.	1.35

Crude Price Changes

PITTSBURGH—Jan. 29 Joseph Seep Purchasing Agency advanced Pennsylvania grade crude in Buckeye lines (Macksburg, O. district), 5 cents, to new price of $1.97 per barrel. Last previous change was a 10 cent advance Oct. 2 last.

Grease Marketers Assn. Broadens Field

DETROIT, Jan. 19.—The former Lubricating Oil Men's Association, of Detroit, has enlarged its field of membership to include marketers of all petroleum products, as well as of lubricating oil and greases and has changed its name to the Independent Petroleum Marketers Association of Michigan, Inc.

"We believe we are representative of the truly independent petroleum marketers of the state," said C. F. Battenfeld, C. F. Battenfeld Oil Co., Detroit, president. Our program calls for continued vigilance which will make for better conditions in the oil business in Michigan." Other officers are R. A. Cross, Richard A. Cross Co., vice-president, F. E. Beck, secretary, C. P. Bryant, treasurer. These and Jack Pomfret, Mich-I-Penn Oil & Grease Co., are directors.

THE OIL INDUSTRY'S HONOR ROLL

Wachonia Oil Co., Winston-Salem, N. C., has bought three delivery trucks and two tank trucks and is planning to purchase various kinds of equipment in connection with plans to remodel the bulk plant formerly occupied by the American Oil Co. Six more people will be employed soon.

Defiance Oils, Inc., Clinton, Okla., has increased its payroll from nine to 12 and is employing six additional people to build a warehouse at Ada, Okla., a new retail station, and to rebuild the office and retail station at Clinton. Recently purchased equipment include four meter pumps, two visible pumps, two air compressors, one tank truck, one delivery truck, with 2100-gallon tank and trailer, and eight bulk storage tanks of 3000 to 4000-gallon capacity. Station equipment is to be purchased just as fast as finances will permit.

Tri-City Oil Co., Nokomis, Ill., plans to install a new storage tank.

Hendricks Bros., Farmersville, Ill., report a 70 per cent gain in sales during 1933.

Denton Oil Co., Pana, Ill., has just purchased three bulk tanks and a new truck.

Valley Oil Co., Clayton, Ohio, doubled its payroll by the addition of two men, has just completed the construction of a new 41,000-gallon storage tank at the Brookville Bulk Plant, recently purchased two electric pumps, and will add one 800-gallon tank truck within the next 30 days.

Pure Oil Co., Chillicothe, Ohio, has added three men to its former payroll of eight.

The Hartley Co., Cambridge, Ohio, has given employment to eight more men and one girl making a total of 52, with a total expenditure for payroll over $1000 higher this December than last.

Benzol Stations, Inc., Detroit, has boosted a payroll of 16 men to 19 and recently bought two new trucks.

Arrow Oil Co., Lansing, Mich., has employed 12 more men making a total of 52 on its permanent payroll and one man temporarily for remodeling one of its stations. A new station was opened Jan. 17 at St. Louis, Mich.

Circleville Oil Co., Circleville, Ohio, hired two men recently, is living up to the code, and at the same time has paid 12 per cent dividends continuously in the past ten years. Plans are now laid for the construction of a new office building and warehouse and a new filling station, and also for the purchase of two new trucks.

Malone Oil Co., Malone, N. Y., put on one more man and one person temporarily for an advertising campaign. Recently purchased equipment include one complete fuel oil pump, meter and hose, oil cans, and delivery buckets, and plans call for similar purchases for a new heated garage service station and work shop.

Peconic Oil Corp., Riverhead, N. Y., increased its payroll from seven to nine and employed two men for temporary construction work on an addition to its service station. A new electric motor and pump unit and a new 5-ton tank truck were recently added to equipment and another similar truck is to be purchased in the near future.

Anna Oil Co., Anna, Ohio, is backing the code by giving employment to five more men, over a 50 per cent increase. One additional man has been employed to modernize a station damaged by fire. Two more new stations are in construction plans for this spring. A new car was purchased for the manager not long ago and a 2000-gallon semi-trailer outfit will be added to equipment soon.

Perham Co-op. Oil Co., Perham, Minn., hired one more man lately on a part time basis.

Dacus Oil Co., Vallejo, Calif., put on one more man and bought a stake truck recently.

R. Withee, Jacksonville, Ill., recently invested in a new lift.

R. Oakley and Co., Athens, Ill., is planning to build a modern service station at Lincoln, Ill., soon, and to purchase equipment for same.

Illinois Independent Oil Co., Lincoln, Ill., just purchased four trucks and five cars, and last September added 10 tanks. Sites have been acquired for four filling stations which will be built and equipped by the most modern methods.

Snyder Oil Co., Colman, S. D., recently purchased a commercial truck.

Elmer Lintz, Graf, Nebr., has completed construction of a new pump island and cement drive and purchased two visible pumps, two underground tanks, three oil pumps, and one grease dolly.

Farmers Gas and Oil Co., Ithaca, Mich., increased its payroll 50 per cent by the employment of four men.

Stanley A. Joy, Inc., Atlantic City, N. J., increased its payroll by two and is employing four more men temporarily in painting, carpentry and repairs. The firm recently bought two hoists, six gasoline pumps and an air compressor and plans to build a warehouse soon.

Sebewaing Gas and Oil Co., Sebewaing, Mich., boosted its payroll by two men and is planning to modernize its station by the addition of a new super-service building, and to purchase a new truck and greasing outfit.

Herman Oil Co., Fremont, Neb., is using two more men and gave employment to two men for two months in constructing a new service station. At present, a modernization program including the building of a cesspool and installation of a pressure water system is in progress with plans for sidewalks, landscaping and a grease house to follow. An air compressor, lubricating equipment, underground tank, pressure water system, and used gasoline pump were recently purchased.

Hi-Speed Petroleum Products, Jackson, Mich., has found places for six men on its payroll and is employing three men to build additional warehouse space and new office. One tank truck is to be purchased in the near future.

Main Oil Co., Holland, Mich., has just spent $150 on a new catwalk over its bulk tanks.

Edwards Oil Co., Carrollton, Ill., has a new super station half completed which will require the purchase of much equipment.

Kanabec County Co-op. Oil Ass'n. Mora, Minn., has added two men to a former total of seven and is giving part time work to one person assisting the Federal Relief for Live Stock program in the county. The purchase of a used tank truck has enabled the seller to purchase a new 1000-gallon tank.

Hiebert Oil Co., Mountain Lake, Minn., made a 100 per cent increase in his payroll by taking on one man.

Northfield Oil Co., Northfield, Minn., boosted a payroll of six to eight men and is employing one more person temporarily in collection and sales work. Service station improvements are planned which include an addition to the building and purchase of underground tanks.

D. L. and Co., Flagtown, N. J., purchased one new 2½-ton truck last summer and one new tank truck this month.

J. C. Clark, Pontiac, Mich., distributor of Hickok Oil Corp., reports one new super station completed Jan. 12 and another to be started at once for which new equipment has been purchased. Although no new help has been hired by Mr. Clarke, he states that most of his dealers have taken on more men.

Worcester Auto and Sales Co., Roodhouse, Ill., made a good showing in 1933 and expects to do even better this year.

Piasa Motor Fuels, Alton, Ill., is enlarging its warehouse.

New Equipment

Lubrication Guns

The United States Air Compressor Co., Cleveland, announces its latest development in specialized lubrication—the U. S. Dual Control One Pound Gun. This unit will deliver the grease to the fitting in a single shot or, by holding a finger on the trigger, as many continuous shots as desired may be released with the same pressure of from 7500 to 10,000 pounds.

Special attention has been given to

convenience of operating so that one hand may be free to use other tools. A very important feature of this gun is that it handles all grades of chassis lubricants as well as heavy fibrous ones in warm or frigid temperatures.

* * *

Storage Tanks

CHICAGO—Bridge and Iron Works Chicago, recently completed two new radial-cone type pressure storage tanks of 38,000 and 55,000 barrels capacity and 86 and 100 feet diameters respectively, for the Warren Petroleum Co. at Houston, Texas. The radial cone design consists of a series of radial girders in both roof and bottom of a cylindrical tank tied together at their outer ends with angles and at the center with a large tubular member. The plates supported by these girders are dished outwardly, each forming a portion of a cone. Those at the bottom rest upon a cushion of sand retained by the lower wall of the tank.

The structure is rigid, building up a gas pressure without expanding as the breather roof. Both tanks are designed for a 6-pound pressure and have a special type of vent to relieve excessive pressure and vacuum. On tanks equipped with pressure vents and sprayed with water the average loss is around 18 per cent per year but with this type of tank practically all of the loss will be stopped.

* * *

Lubrication Equipment

Erie Meter Systems, Inc., Erie, Pa., is prepared to furnish complete specialized lubrication equipment, including lifts, Graco grease guns, gear flusher, crankcase flushers, and a service station building with the proper lubritorium wings, according to a recent announcement.

* * *

Hydraulic Lift

The Ottawa Mfg. Co., Ottawa, Kansas, is introducing a new line of tankless hydraulic lifts in both the free wheel and drive-on models to accommodate all the 1934 cars as well as older styles. The new line operates on less oil, gives a third more lifting power, and has a new Oil Passage and Safety Port to insure fool-proof safety.

* * *

Air Compressors

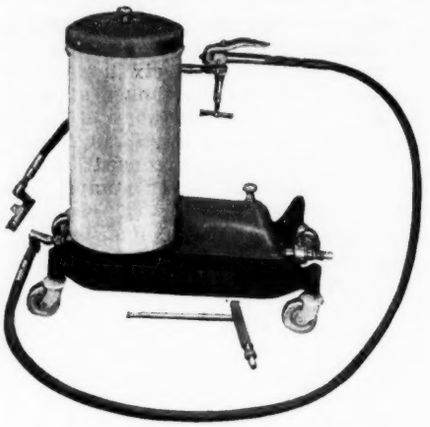
The Dayton Air Compressor Co., Dayton, Ohio, has put on the market recently a new and revolutionary improvement on air compressors in the form of an Automatic Vacuum Unloader. This device automatically unloads the compressor, wherever it stops, regardless of pressure, allowing the motor to start against no load at all times.

The Unloader functions similarly whenever the current switch is pulled thus saving considerably in the cost of operation. Another new and unique device whose purpose is to supply an unimpeded flow of air, is Dayton's new Non-Pulsating Check Valve, which opens when the compressor starts, stays open during operation, and closes when compressor stops.

* * *

Lubrication Guns

Stewart-Warner Corp., Chicago, has added two new powerguns of 25-pound capacity, HA-25 (air operated) and

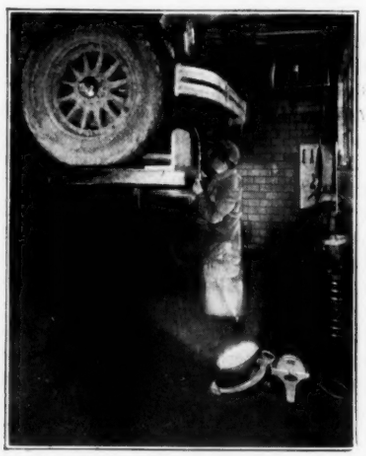


HE-25 (electric), to its extensive line of lubricating equipment. They are equipped with a 7-foot rubber hose, a 2-foot whip end hose, a booster control valve and a Push Type adapter. The double acting air motor on these models will handle the most viscous grades and develops a pressure at the hose end 40 times the air pressure. All working parts are completely enclosed and long life is further assured by nitralloy steel pistons and an oiler and air strainer assembly at the air inlet. These power-guns will deliver nine ounces of chassis lubricant per minute.

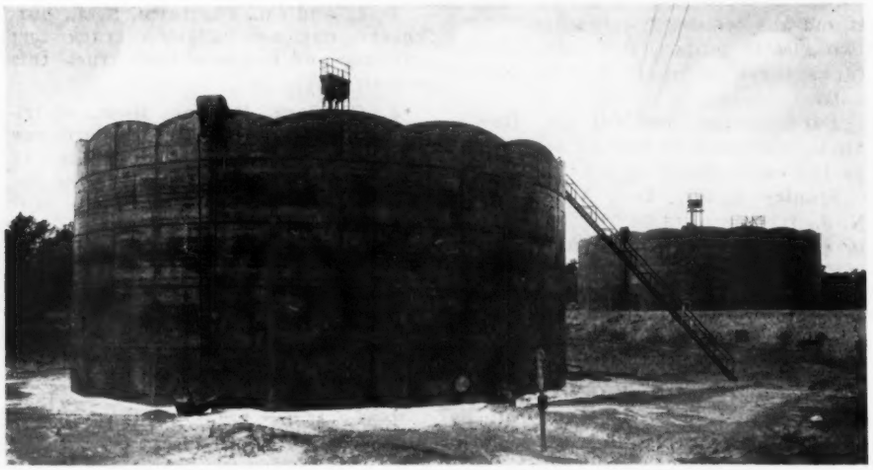
* * *

Extension Lamp

The Rolling Adapt-a-Lite for lighting the under structure of motor cars or



for other service where upward illumination is required, has been developed by the Appleton Electric Co., Chicago. The light may be rolled about freely on



its three wheels or carried by a convenient handle. The Adapt-a-Lite is made in two styles—one with reel for cord and the other with rack.

* * *

Canned Oil Dispenser

The Huffman Mfg. Co., Dayton, Ohio, is announcing a new "Sealdoyl" Dispenser featuring a rigid, non-slip spout

which enables the dispenser to stand alone in the intake pipe, and a thumb control valve which controls flow from the dispenser at all times.

* * *

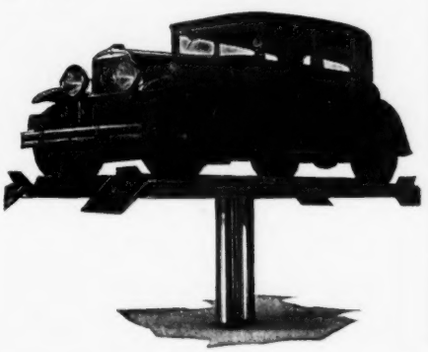
Motor Car Lifts

Weaver Manufacturing Co., Springfield, Ill., has developed a new Weaver Twin Post Lift which raises cars, including the new "knee action" cars, by their axles and leaves the whole understructure unobstructed for any type of service work. Movement of the front post has a range of 60 inches, enabling the accommodation of cars whose wheel base varies from 100 to 160 inches. When not in use the floor space is left practically unobstructed.

* * *

Motor Car Lift

St. Louis Lift and Equipment Corp., St. Louis, is now supplying a new piston type lift with two plungers operating in two individual casings as a single unit for greater lifting capacity at lower air pressure. These lifts are full oil-draulic and are made in both the free wheel and drive-on types with a choice of compressed air or electric motor power. Their rated capacity is 7500 pounds with a tested safety factor of two.



SOLD ENTIRELY ON ITS MERITS

SMITH-JOHNSON POWER LUBRICATOR STOPS EXCESSIVE LUBRICATING COSTS

Low Price and Long Life
Handles All Lubricants
Saves Time and Money
A *Complete* Lubricating System in *One* Unit

$29.50
Complete With 4 Extra Magazines

All Purchasers of Lubricating Equipment are invited to compare the Smith-Johnson Unit with any other lubricator on the market — for Efficiency, Durability and Price.

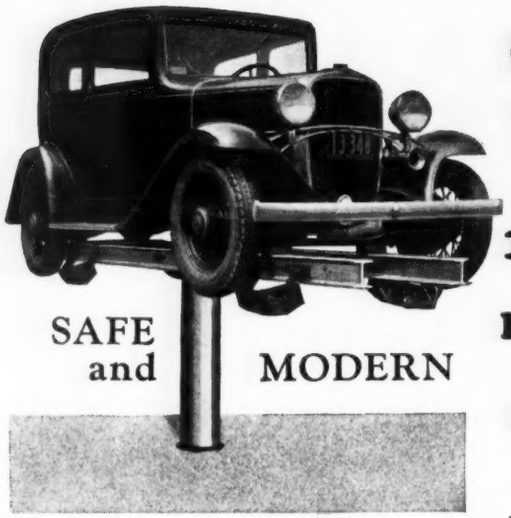
Manufactured by

SMITH-JOHNSON CORPORATION
906 Bendix Building — Los Angeles, California

HyVis MoToR & OIL
SUPER-REFINED PENNSYLVANIA
Trade Mark Reg. U.S. Pat. Off.

Effective February 1, 1934, Hyvis Oils, Inc. announces the opening of its branch office and warehouse in The Northwest Terminal, 2101 Kennedy Street, N. E., Minneapolis, Minnesota. A complete assortment of all grades of Hyvis Motor Oil in refinery sealed drums and 1 quart and 5 quart cans is in stock.

HyVis Oils, Inc.
WARREN, PENNSYLVANIA



SAFE and MODERN

CURTIS Lifts Handle 1934 Cars with Independent Wheel Suspension

THAT is the beauty of Curtis Lifts. They are not only safe, but their design is always abreast of the developments of the industry and demands of the trade.

When you're under a Curtis Lift there is no need to worry about what's holding it.

Two separate controls, one oil and one air, are provided; neither will work alone. Stops lowering and is oil-locked the instant the operator removes his foot from the oil-lock valve. Lowering speed is controlled by an automatic retard valve.

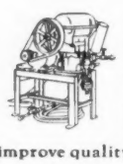
Curtis "Drop-Away" Wheel Guides quickly and automatically locate the car on free-wheel platform.

Air-On-Oil or electrically operated roll-on or free wheel styles.

Note other Curtis features; then write for details.

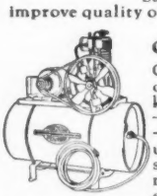
CURTIS FEATURES

1. Safe working load 8,000# (also 12,000# and 20,000# bus and truck sizes) high factor of safety. All oil-locked.
2. Plunger only moving part.
3. All working parts above ground and accessible.
4. Only lift practical for car washing—because a grease gland keeps a collar of grease around plunger. Mud and grit cannot get into packing where it will eventually score the plunger.
5. Simple, unfailing, automatic retard valve positively controls lowering speed.
6. Compensating (freewheel) platform prevents binding of plunger due to uneven load distribution.
7. Air can be re-used for spray gun operation.
8. Nominal installation expense.



Car Washer

Hydraulic type and air-and-water type units—self-lubricating—silent V-Belt Drive. Save time and improve quality of wash jobs.



Compressors

Centro-Ring oiling—Timken Bearings—V-Belt Drive—Centrifugal unloader starts against no load. Pressed steel base. Universal motor mounting. ¾ to 10 H. P. Single and two stage.

CURTIS

CURTIS PNEUMATIC MACHINERY CO.
1965 Kienlen Avenue, St. Louis, Missouri
518 X Hudson Terminal, New York City

"SATISFACTION FIRST—DOLLARS NEXT!"

17 Years of Dependable Service to the Industry

CRUDE OIL

Gasoline—Kerosene—Distillates—Furnace Oil
Painters and Cleaners Napthas—Natural Gasoline
Coastal Lubricating Oils—Bright Stocks—Neutral
Asphalt—Road Oil—Flux Oil—Petroleum Coke.

One Car or One Train . . . Wire, Write, Telephone

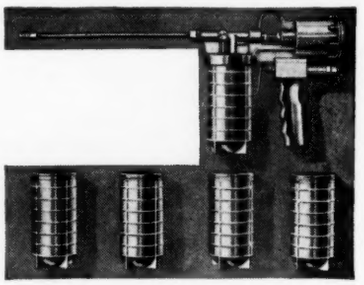
PRIMROSE PETROLEUM CO., Inc.

(Incorporated under the laws of the State of Texas, 1916)

DALLAS, TEXAS

Grease Guns

Smith-Johnson Corp., Los Angeles, is now supplying a complete lubrication



unit known as the S & J Multi-Lube unit which is claimed to do a complete lubricating job with one gun by changing lubricant magazines.

* * *

Grease Nozzle

The "Mono-matic Non-drip Grease Nozzle" is a new accessory in Service Station Equipment Co.'s line. The nozzle is designed to fit all makes and types of transmissions and differentials, has an outstanding feature of being one man operated, and as indicated by the name, does not drip on account of the spring operated valve at the end of the tube.

* * *

Motor Car Lift

Walker Mfg. Co., Racine, Wis., illustrate the advantages of the new Walker Electric Lift in a new trade publication which was started this month. The lift was designed so that it can be set up anywhere by the dealer without aid and can be moved about with comparative ease. It is supported on four posts acting as guides and is raised by means of cables running over sheaves at the four corners. The electric motor and drum over which the cables are wound is located at the top one of the posts. Both the free wheel and drive-on types are available and each accommodates the 1934 cars as well as older models.

* * *

Interesting Information On . . . . .

Furfural. The Furfural Division of the Quaker Oats Co., Chicago, has for distribution an informing booklet of 18 pages entitled "The Furans." The booklet brings together in one place chemical and physical data on furfural with descriptions which are informative and useful to those who may find uses for it or its derivatives. A history of furfural is also given briefly to introduce the material.

* * *

Oil Testers. Tryon Viscostor Corp., Elmira, N. Y., has published a booklet on crankcase lubrication in connection with the Viscostor, a small hand operated visible tester of crankcase oil

which shows the relative viscosity of new and used oil and the quantity of dirt present.

* * *

Steam Plant Operation. "Steam Plant Errors" is the subject of a 75-page booklet published by The Stepler Co., Seattle, which suggests tactful conversational methods for correcting a number of common mistaken notions of steam engines.

* * *

Service Station Equipment. The new 1934, 80th anniversary catalog of Curtis Pneumatic Machinery Co., St. Louis, is now off the press. It covers several new items, particularly vertical tank compressor units which occupy less floor space, new and larger size two-stage compressor units for large super-service stations and repair shops, as well as other new items of interest.

Universal front brackets which make it possible to accommodate the new 1934 cars on any free-wheel lift without any drilling or fitting are also being supplied by Curtis now.

* * *

Steam Traps. A new twenty-page catalog entitled "The Solution of Your Condensation Problem" is now being distributed by Nason Mfg. Co., New York. The catalog is unique in that it explains various condensation problems which have been met and solved, and because it describes and illustrates all types of steam traps. Of particular interest is its explanation of the large savings that can be effected in almost every kind of plant.

* * *

Architectural Stainless Steel. A new brochure, Bulletin 124, just published by Republic Steel Corp., Youngstown, Ohio, contains much information on architectural applications of Enduro stainless steel . . . its fabrication, properties, shapes and finishes available, and a list of distributors who maintain warehouse stocks.

* **

Diesel Engines. Busch-Sulzer Bros.-Diesel Engine Co., St. Louis, is distributing a new booklet describing six new diesels including the world's largest locomotive diesel and Trunk Piston diesel, all "depression developments."

* * *

Activated Alumina. Aluminum Co. of America has just issued a brochure describing some of the commercial applications of Activated Alumina. Alumina, by itself, is well known as a dehydrating catalyst but hitherto has not been available in the granular form in which activated alumina is now being made. Sizes up to 1½ inches give it a wider field of use. As an adsorbent this material has the property of selective adsorption, is inert, and will remove moisture and oil vapors from compressed gases. It may be repeatedly reactivated without removal. Several applications of its use are described which cover solvent recovery, use as catalyst and catalyst carrier, separation, purification, conditioning, reclamation, and refining.

It is of interest to note in this connection that certain patents indicate that activated silicate of alumina has been used as a cracking process catalyst and that the Houdry Process described in Dec. 27 issue may employ this material although mention is not made of it.

* * *

Metallic Packing. A new 36-page catalog of the American Metallic Packing Co. of Pittsburgh, Pa., shows metallic packing for every standard use in connection with steam, air, gas, gaseous ammonia and carbon dioxide equipment. Numerous cuts and drawings with simplified data assist the engineer in understanding the use of different styles of packing rings.

* * *

Air Preheaters. The Air Preheater Corp., New York, has issued a new bulletin No. 933 for those interested in industrial heat recovery, illustrating various applications of the Ljungstrom continuous regenerative counterflow air preheater now made with increased heating surface.

* * *

Flexible Shaft Couplings. Poole Foundry & Machine Co., Baltimore, Md., has just issued a new catalog on flexible shaft couplings of many types with much engineering data such as horsepower ratings, maximum speeds, dimensions, weights, etc.

* * *

Motor Drive Bases. The Rockwood Mfg. Co., Indianapolis, Ind., has issued five new folders covering current developments in Rockwood pivoted motor drive bases. A new type of automatic tension control is being used on its new ceiling and vertical types of bases. A new Rockwood drive truck is also announced which is finding use in industrial plants as a spare portable motor outfit.

* * *

Roller Bearings. A new Timken Engineering Journal has just been completed by the Timken Roller Bearing Co., Canton, Ohio, which contains 266 loose leaves. New load ratings have been established to conform to the fatigue life of the bearings which materially differ from previous editions. One section of the book is given to explanation of these new ratings and their application to bearing computations. This is followed by the presentation of the types of bearings available and dimensions, miscellaneous parts used with them, methods of mounting, and recommendations for lubricants.

* * *

Plug Valves. A pamphlet just issued by the American Car & Foundry Co., New York, describes the new a.c.f. improved lubricated plug valve and gives complete specifications of sizes and table of recommended lubricants for various materials passing through the valves.

WHO LOOKS AT "WASHED-OUT BLONDES"?

•AND who likes to get washed out looking, *faded* gas? That's why we emphasize the fact that it is far better business to use non-fading Anthraquinone dyes for your gasoline—at no extra price.

Pioneers in the field of colors for gasoline, we offer a complete range of colors, fully soluble in gasoline but not affected by light, acids, alkalis or long storage. Non-fading in the presence of tetraethyl lead. Write for samples — and prices—before you dye.

•

(Marketing Division)
PATENT FUELS AND COLOR CORP.
Carew Tower, Cincinnati, O.

•

(Manufacturing Division)
PATENT CHEMICALS, INC.
57 Wilkinson Ave., Jersey City, N. J.

Two recent Schrader counter-cards (6" x 9")—colorful eye-catching, purchase-stimulating. Other useful sales helps available to Schrader retail outlets.

GET YOUR SHARE
of the profits these much-needed items bring

"For the fastest turnover, sell items that are needed by the largest number of people," has been a long-standing axiom among successful merchants. In the automotive field there are few replacement items more widely and continuously required than tire-valve necessities. No tire, gas, garage or accessory service is complete without the Schrader products shown above.

Schrader products mean more profit to you. They have consumer acceptance and are backed by national advertising. You make more sales and a quicker turnover.

A Schrader display; a word or two to the customer—and many a sale of Schrader Dublcheks can be rung up. A further reminder—that valve cores do become old and worn—and a set of Schrader Valve Cores is easily added to the transaction. Many small sales add up to big profits in the course of a season. Why miss them? A. Schrader's Son, Inc., Brooklyn, N. Y.; Toronto, Can.—Makers of pneumatic valves since 1844.

Are you familiar with the completeness of Schrader Air Service Equipment—for your own use? Ask your regular source of supply about these items too.

Schrader
Reg. U. S. Pat. Off.
TIRE-SAVING VALVES, CAPS AND GAUGES

New England Oil Men Plan Annual Meeting

BOSTON, Jan. 29.—The tenth annual meeting of the Independent Oil Men's Association of New England will be held March 15 at Hotel Statler, Boston.

A program has been arranged to appeal particularly to heating oil distributors, service station operators and marketers of lubricating oils, according to W. S. Hall, of Moore & Kling, Inc., distributor of oil equipment here.

Every one engaged in the petroleum industry or interested in it is invited to attend, and a large gathering is expected, both of oil men and oil equipment executives.

Distributors Wolf's Head Oil

MILWAUKEE—Rhode Oil Co., West Allis, successor to the Rhode Deuster Hinkley Oil Co., has been appointed distributor for Wolf's Head motor oil. Howard C. Clark, formerly in the automotive industry, has joined the company.

World Gasoline Prices Up 4.5c In 1933

WASHINGTON, Jan. 25.—The average retail price of motor gasoline in 55 countries outside the United States, as of Oct. 10, 1933, was 33.2 cents per U. S. gallon, and of kerosine, 27.6 cents per gallon, according to the Bureau of Foreign and Domestic Commerce. This compares with an average price of 28.8 cents for gasoline at the beginning of 1933 and of 23 cents for kerosine.

Prices of gasoline in the various countries ranged from as low as 12.2 cents per gallon in Chosen (Korea), to as high as 68.8 cents in Italy, and of kerosine, from as low as 11.7 cents in Iraq, to as high as 65.4 cents in Albania.

The bureau, however, warns against comparing these prices with those in the United States, due to the many taxes and duties which apply. Duty as high as 34.8 cents per gallon on gasoline, for instance, applies at Ascuncion, Paraguay, where the price to the consumer is 55 cents per gallon. Kerosine price at this point is 52.4 cents in tins, including a duty of 9.8 cents.

Prices in Italy were the highest of any country on the above date, due to the fact that she has no petroleum resources of her own but must import all of her oils. Gasoline at Milan sold at 68.8 cents and kerosine at 53.7 cents per gallon, including duty of 25 cents and 23.2 cents respectively, plus tax of 19 cents and 3.3 cents respectively. A gasoline-alcohol blend was selling for 60.8 cents per gallon at Milan at the time.

Average prices at one or more points in the more important countries were in effect on gasoline and kerosine, per gallon, including taxes and duties, as of Oct. 10, 1933:

Country	Gasoline	Kerosine
(In cents per U. S. gallon at prevailing rate of exchange)		
Australia	21.8	22.1
Austria	33.3	16.7
Bulgaria	40.0	33.0
Chile	26.6	24.8
China	18.2	18.0
Czechoslovakia	50.9	29.5
Denmark	24.0	16.0
Ecuador	13.0	13.5
Ethiopia	63.0	34.0
France	39.4	45.2
Greece	32.4	36.2
India	27.5	14.8
Irish Free State	31.0	17.5
Japan	14.8	14.6
Kenya (Br. E. Africa)	44.8	32.0
Netherland India	51.8	30.3
Panama	21.0	17.0
Persia	27.0	20.9
Peru	18.2	13.1
Poland	44.0	35.2
Spain	36.5	38.4
Switzerland	33.9	27.6
United Kingdom	27.5	13.3

Prices as of July 10, 1933, were 31 cents for gasoline and 23.5 cents for kerosine; as of April 10, 1933, 26.3 cents and 21.1 cents respectively.

Average prices for the four previous years for gasoline and kerosine respectively, including taxes and duties, were: 1932, 28.8 and 23 cents; 1931, 30.8 and 26.9 cents; 1930, 36.3 and 30 cents; and 1929, 37.4 and 31.4 cents.

SENECA FALLS, N. Y.—Goulds Pumps, Inc. has made the following recent changes in its selling organization. Maxfield Pease will be district representative for the Cleveland territory with an office at 4614 Prospect Ave. William A. DaLee, 4829 Woodward Ave., has been appointed district representative for the Detroit territory and Walter S. Bryde, formerly in charge of the Detroit territory, is now covering Western New York as factory salesman with headquarters at 137 Linden Ave., Rochester, N. Y.

KNOXVILLE, Iowa. — Michigan Dixie distributors have started issuing a weekly news letter to members, the "Dix-O-Gram," following the precedent of the Wisconsin and Oklahoma Dixie groups, according to the Dixie Booster.

CHICAGO, Jan. 23.—W. H. Strobel has become associated with Refiners Sales & Service, Milwaukee, Wisc. Mr. Strobel was connected with the Bodie-Hoover Petroleum Co., Chicago for many years.

New Patents

Prepared by R. E. Burnham, patent and trade-mark attorney, 511 Eleventh street, N. W., Washington, D. C., from whom copies may be obtained at the rate of 25c each. State number of patent and name of inventor when ordering.

December 19, 1933

REFINING

The following to Tretolite Co. as assignee of the inventors:

Process for breaking petroleum emulsions—Melvin De Groote, St. Louis, Mo., and Louis T. Monson, Los Angeles, Calif. Filed Oct. 5, 1931. No. 1,940,390.

Processes for breaking petroleum emulsions—De Groote, and Arthur F. Wirtel of Richmond Heights, Mo. Filed Jan. 21, 1933. Nos. 1,940,391, 1,940,392, 1,940,393, 1,940,394, 1,940,395, 1,940,396, 1,940,397, and 1,940,398.

* * *

MISCELLANEOUS

Gum-inhibitor for hydrocarbons (gasoline)—William S. Calcott, Penns Grove, N. J., and Herbert W. Walker, Wilmington, Del., assignors to E. I. du Pont de Nemours & Co. Filed Sept. 28, 1929. No. 1,939,659.

Dispensing apparatus — Charles Spaeth, Cleveland, Ohio. Filed June 21, 1932. No. 1,940,064.

Additional agent for motor fuels—Martin Mueller-Conradi and Wilhelm Wilke, Germany, assignors to I. G. Farbenindustrie. Filed Mar. 4, 1930. No. 1,940,096.

Dispensing apparatus—Paul B. Renfrew, Fort Wayne, Ind., assignor to S. F. Bowser & Co. Filed Apr. 10, 1930. No. 1,940,271.

Fuel for internal-combustion engines and operation of internal-combustion engines—Gellert Alleman, Wallingford, Pa., assignor to Sun Oil Co. Filed Jan. 18, 1929. Nos. 1,940,439 and 1,940,440, respectively.

Gum-inhibitor for gasoline—William S. Calcott, Penns Grove, N. J., and Ira E. Lee, Wilmington, Del., assignors to E. I. du Pont de Nemours & Co. Filed Aug. 7, 1929. No. 1,940,445.

Insecticide and process of making—Dudley H. Grant, New York, N. Y., assignor to Standard Oil Development Co. Filed Oct. 19, 1927. No. 1,940,646.

Recording device for liquid-dispensing apparatus — William M. Carroll, Dayton, Ohio. Filed Oct. 1, 1928. No. 1,940,656.

Lubricating oils—Alfred Hendriksen and Bert H. Lincoln, Ponca City, Okla., assignors to Continental Oil Co. No. 1,939,979 filed Jan. 26, 1933, and Nos 1,939,993, 1,939,994, and 1,939,995 filed July 25, 1932.

December 26, 1933

REFINING

Separator for treated emulsions—Francis D. Mahone, Long Beach, Calif., assignor to Petroleum Rectifying Co. Filed Aug. 15, 1932. No. 1,940,762.

Treated oil settling device—Harmon F. Fisher, Long Beach, Calif., assignor to Petroleum Rectifying Co. Filed Nov. 14, 1927. No. 1,940,794.

Control device for fractionators and like—Floyd J. Kallam, South Gate, Calif. Filed Dec. 9, 1929. No. 1,940,802.

Condenser-control device—Kallam—Filed Dec. 16, 1929. No. 1,940,803.

Process for refining sour hydrocarbon oil—Lawrence M. Henderson, Narberth, Pa., assignor to Atlantic Refining Co. Filed Jan. 9, 1931. No. 1,940,861.

GOOD NEWS TRAVELS FAST

HELLO . . .

MR. LUBE OIL REFINER

Have you heard the good news? . . . A new Sealed Oil Container which is the first and only 100% solution to oil bootlegging, is being rushed ready for introduction to the Lube Oil field! . . . This new container is absolutely REFILLABLE PROOF . . . and besides, it saves as much as 75% in costs! . . . Also, has many additional unheard of features . . . The name of this revolutionary new container is CANVELOPE . . . No . . . further details cannot be given now. But, CANVELOPE will soon disclose such sensational facts that past practices will be rendered obsolete overnight! . . . Pass on the good news and delay your sealed container purchasing plans just a short while longer . . . IT WILL PAY YOU TO WAIT FOR CANVELOPE!

WATCH THIS SPACE IN COMING ISSUES.

OIL PRICE HANDBOOKS

HAVE you a complete record of REFINERY prices; TANK WAGON markets; EXPORT prices; CRUDE prices—

For quick reference and comparison with today's prices?

The OIL PRICE HANDBOOK is the only complete record of oil markets for a whole year, compiled in one handy volume for quick reference. Cloth bound—marginal index—9″ x 6″.

Oil Price Handbook for 1933 . . . $10.00
For 1932, 1931, 1930 or 1929 . . . $7.50
For 1928, 1927 or 1926 . . . $5.00
For 1925 and 1924 . . . $6.00

Send for these OIL PRICE HANDBOOKS now before they are out of print.

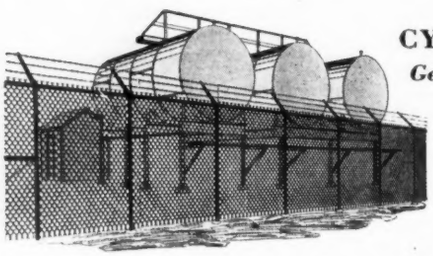
National Petroleum News, 735 Penton Bldg., Cleveland, Ohio

You can't STOP LOSSES by putting up your hand

The protection of your property is an important part of profit making. A theft, a fire, or a damage suit can wipe out several years profit over night. It is essential that your income producing facilities be safeguarded at all times and it can't be done by putting up your hand. Signs and warnings are merely invitations to the trespasser.

Adequate protection may be secured quickly and economically by calling in the nearest Cyclone Fence Sales Engineer. He will be able to make helpful suggestions and furnish an *accurate* cost estimate with no obligation to you. You will be surprised to find out how little real protection will cost.

Cyclone Fence is manufactured by a company with 47 years of quality fence building experience. Made of durable copper-steel and galvanized AFTER weaving, it lasts years longer. Our factory-trained crews will erect your fence, if you so desire. Write for catalog describing Cyclone Fence adaptable to your requirements. Address Department N. P.



CYCLONE FENCE COMPANY

General Offices: Waukegan, Ill.

Branches in Principal Cities

SUBSIDIARY OF UNITED STATES STEEL CORPORATION

Pacific Coast Division:

Standard Fence Company, General Offices, Oakland, Calif.

Cyclone—not a type of fence but fence made exclusively by Cyclone Fence Company and identified by this trademark.

Cyclone Fence

REG. U.S. PAT. OFF.

Cyclone FENCE

"Burning Liquid Fuel"

LEARN real facts which have never been published before on the subject of burning liquid fuel, by W. N. Best, the recognized authority.

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National Petroleum News

1213 W. 3rd Street Cleveland, Ohio

Parsons Heads Refining Program Committee

CLEVELAND, Jan. 26.—Dr. L. W. Parsons, Tide Water Oil Co., New York, has been appointed chairman of the 1934 program committee of the Division of Refining, American Petroleum Institute, by Howard Bennette, chairman of the general committee for refining. Dr. R. P. Anderson, technologist on the institute staff, is secretary.

The 13 other members of the committee are:

H. W. Camp, Empire Oil and Refining Co., Tulsa; R. T. Haslam, Standard Oil Development Co., New York; R. E. Haylett, Union Oil Co. of Calif., Los Angeles; J. Bennett Hill, The Atlantic Refining Co., Philadelphia; E. W. Isom, Sinclair Refining Co., New York; K. G. Mackenzie, The Texas Co., New York; Walter Miller, Continental Oil Co., Ponca City; Arthur E. Pew, Jr., Sun Oil Co., Philadelphia, J. B. Rather, Socony-Vacuum Corp., New York; A. S. Russell, Standard Oil Co. of Calif., San Francisco; Herschel G. Smith, Gulf Refining Co., Philadelphia; F. W. L. Tydeman, Shell Development Co., San Francisco; and R. E. Wilson, Standard Oil Co. (Indiana), Chicago.

Two additions to the special subcommittee on tanker and barge fires of the Division of Marketing, working under the Committee on Fire Prevention, have been announced by C. A. Ellis, chairman of the main committee. The two new members are H. A. Browne, Shell Eastern Petroleum Products, Inc., and W. F. Jones, superintendent of the Marine Department of the Gulf Refining Co., both of New York.

A Lot of Lees

CHICAGO—Four generations of the Lee family have been connected with Standard Oil Co. of Indiana's bulk plant at Three Oaks, Mich. Joseph Lee was appointed agent in January, 1892. His father, George, became the station's rural driver. Lester Lee, son of Joseph, represents the third generation, and a nephew of Lester's Eldon Lee, rural driver, represents the fourth generation. Some old time experiences are related by Joseph Lee in a recent issue of the company's house organ, the *Stanolind Record*.

ROCHESTER, N. Y.—A new organization under the name of the Kellogg Equipment Corp. has been formed in Rochester to operate as the sales department for Kellogg Mfg. Co., The Green Castle Mfg. Co., Green Castle, Pa., manufacturers of a line of general shop equipment, and the Oildraulic Lift Co., Memphis, Tenn., manufacturers of automobile lifts.

On The Lazy Bench

Harold—Where are you going, mamma?

Mother—Papa and I are going to a surprise party.

Harold—Can't I go too—and can't we take Bobby and Susie along too?

Mother—No, you were not invited.

Harold—Well, don't you think they'd be lots more surprised if you took us all?

—The Oil Can,
Illinois Petroleum Marketers.

* * *

Mother: "Bobby, what did you do with the shells when you were eating those peanuts in the street car?"

Bobby: "I didn't want to throw them on the floor, so I put them in the pocket of a man who was sitting next to me."

—Independent Topics
Iowa Petroleum Assoc.

* * *

Neighbor: "Where is your brother, Freddie?"

Freddie: "He's in the house playing a duet. I finished first."

—Marquette Lubricator,
Marquette Pet. Products, Inc.

* * *

"I hear that the Spoopendikes have had a falling out. Is it one of those cases where the wife didn't understand the husband?"

"No, it's one of those cases where she understood him so well that she wouldn't have anything to do with him."

—The Oil Can,
Illinois Petroleum Marketers.

* * *

Lady of the House—Why don't you go to work? Don't you know that a rolling stone gathers no moss?

Browning (the tramp)—Madam, not to evade your question at all, but merely to obtain information, may I ask of what practical utility moss is to a man in my condition?

—Independent Topics
Iowa Petroleum Assoc.

* * *

Hearing his friend Pat was seriously ill, Mike went to see him. He climbed up to the little attic where Pat lived and found him looking very sick indeed.

"Cheer up, me boy!" said Mike. "Ye'll soon be up on yer feet, and 'round as usual. Ye're good for another 50 years."

Thus Mike continued to cheer his friend up. After a while he bade him a cheerful farewell. On his way out his head came in contact with the low ceiling.

"Good Lor', Pat," he exclaimed, "how will they ever get a corpse out o' this place?"

—Marquette Lubricator,
Marquette Pet. Products, Inc.

One Reason why Motorists may give Your Station the "Go By"

Many motorists never forget a filling station with a dirty washroom. Don't take any chances. Keep your restrooms clean. See that they are well ventilated always. Equip them with a modern, sanitary washroom service. A.P.W. Onliwon Towels and Toilet Tissue. Served double-folded from sanitary cabinets, Onliwon Towels are doubly absorbent and doubly resistant to puncturing of wet hands. Insure the user a complete dry every time. Hygienic cabinets protect A.P.W. Onliwon Towels from dirt and germs that common towels are often exposed to in service station washrooms. With Onliwon Towels, order its companion service A.P.W. Onliwon Tissue. With spick and span restrooms and A.P.W. Onliwon Washroom service, you can bet that motorists won't give your stations the "go by".

NRA

A.P.W.

Without obligation, write A. P. W. Paper Co., Albany, N. Y., for samples and/or name of local distributor as near you as your telephone.

TURN to the classified advertising page near the back of this issue. You will find some interesting items there . . . . . .

Transactions in Oil Stocks on New York Stock Exchange

1932 High	1932 Low	1933 High	1933 Low	Listed Shares	Par Value	Company	Div. Rate Period	Last Div. Paid	Transactions Week Ended Jan. 27 Sales Shares	High	Low	Last	Week's Change
22⅝	12	47⅝	18½	922,070	N.P.	Amerada Corp.	50cQ	Oct. 31, 33	13,000	49	45¾	47¾	+ 1¾
16½	6½	35½	6¾	2,290,412	$25	Associated Oil Co.	50c	Dec. 22, 33	70	31½	30	31½	+ 1½
21⅞	8⅝	32½	12⅝	2,696,652	25	Atlantic Refining Co.	25cQ	Dec. 15, 33	53,800	33⅜	31⅝	32½	+ ⅝
7	3⅝	11	3	2,258,779	5	Barnsdall Corp.	....	May 11, 31	46,100	10	9¼	9⅜	0
12½	9	12	5¼	1,444,970	N.P.	Colonial Beacon Oil Co.	....	.....	100	8	8	8	+ 1
9	4	15¾	5	14,218,835	N.P.	Consolidated Oil Corp.	....	.....	106,400	12¼	11⅝	11⅝	+ ⅛
101	79	108	95½	132,771	$100	do pfd.	$2Q	Nov. 15, 33	.....	.....	.....	.....	.....
9⅜	3⅝	19⅝	4⅞	4,722,652	5	Continental Oil Co.	....	.....	61,900	19½	18½	19⅛	+ ⅜
15½	4¾	27	4⅝	413,333	$10	General Asphalt Co.	....	June 15, 32	13,200	20⅛	18½	18¾	+ ¼
28¼	8¾	38	8¼	95,841	$100	Houston Oil Co.	....	.....	10,800	29	25⅞	26½	+ 1
5⅜	1⅜	7⅜	1⅞	678,234	25	do v.t.c.	....	Feb. 1, 32	9,400	5⅜	4¾	4⅞	+ ⅛
2¾	1	4½	1⅛	1,207,132	10	Indian Refining Co.	....	Dec. 15, 20	600	3⅜	3¼	3¼	0
.....	.....	.....	.....	.....	.....	do pfd (old)	....	Oct. 1, 30	.....	.....	.....	.....	.....
2¼	½	4	⅜	1,309,060	N.P.	Louisiana Oil Ref'g. Corp.	....	.....	2,800	2½	2	2¼	+ ¼
18	3	29	3½	40,000	$100	do pfd.	....	May 16, 32	210	18½	15	16	+ 2
1½	⅜	4	½	330,000	N.P.	Maracaibo Oil Exploration Co.	....	.....	400	2¼	2	2	+ ¼
65	50	72	55	449,083	$100	Mexican Petroleum Co.	....	Apr. 20, 31	10	63½	63½	63½	+ 3½
8⅞	3¾	16	3¾	1,857,912	N.P.	Mid-Continent Pet. Corp.	....	Feb. 16, 31	14,100	14⅛	13	13¼	+ ¼
11	5	17⅜	4¾	6,648,052	N.P.	Ohio Oil Co.	....	Dec. 15, 32	49,700	15¾	14½	14½	0
14	6	14	8	4,699,885	$5	Pan Amer. Pet. & Transp. Co.	....	Mar. 15, 33	200	11¼	11¼	11¼	0
1¼	¼	4¼	⅜	199,370	N.P.	Panhandle Prod. & Ref'g. Co.	....	.....	1,200	2⅜	1¾	2	0
14	3½	20	5¾	17,994	$100	do pfd.	....	July 2, 23	50	15¼	14¼	14¼	+ ¼
7⅜	3	15	4⅝	2,153,444	5	Petroleum Corp. of America	....	June 1, 31	12,300	11⅝	10⅝	11¼	+ ¾
8⅛	2	18¾	4¾	4,439,450	N.P.	Phillips Petroleum Co.	25c	Jan. 2, 31	68,500	17⅝	16⅝	17½	+ ⅝
⅝	¼	1⅜	¼	1,184,817	$25	Pierce Oil Corp.	....	.....	7,700	1	⅞	1	+ ⅛
9	3½	13¼	3⅞	150,000	100	do pfd.	....	Feb. 1, 22	600	9	8½	9	+ ¾
1⅝	½	2¾	⅝	2,500,000	N.P.	Pierce Petroleum Corp.	....	Feb. 16, 31	3,400	1¾	1½	1¾	+ ⅛
12½	8½	17⅝	6¾	1,050,000	$5	Plymouth Oil	25cQ	Dec. 31, 33	69,100	16⅜	15¼	15⅞	+ ⅜
9½	3½	15½	5⅝	2,441,432	25	Prairie Oil & Gas Co.	....	Mar. 31, 31	.....	.....	.....	.....	.....
12¼	5½	22	7	4,050,000	25	Prairie Pipe Line Co.	....	July 1, 31	300	18½	16	18½	+ 4½
1⅜	⅛	2⅞	¼	749,017	50	Producers & Refiners Corp.	....	Sept. 15, 23	37,500	⅝	⅝	⅝	— ⅛
9¾	1	13	2	28,186	50	do pfd.	....	May 4, 25	1,200	5	4¼	4½	+ ⅛
6½	2⅞	15⅜	2½	3,038,370	N.P.	Pure Oil Co.	....	Sept. 1, 30	52,100	13⅜	12¼	13	+ ⅞
80	50	69⅞	30	130,000	$100	do 8% pfd.	....	Apr. 1, 33	1,370	72	65½	71¾	+ 6⅛
23¾	12⅛	39¾	17⅝	425,342	$14.00	Royal Dutch Co. (N. Y. shares)	$1.07½	Aug. 14, 33	1,100	38¼	37¼	38¼	+ ¾
20⅝	6⅝	43⅜	15	1,244,383	N.P.	Seaboard Oil Co. of Del.	15cQ	Dec. 15, 33	21,000	34⅜	31⅜	33	+ 1⅝
16⅜	8	31	11¼	56,148	L2	Shell Transport & Trading Co.	67c	July 28, 33	.....	.....	.....	.....	.....
8⅝	2½	11⅝	4	13,070,625	N.P.	Shell Union Oil Corp.	....	June 30, 30	103,100	11½	9¼	11⅜	+ 2⅛
65¼	18	61	28½	400,000	$100	do pfd w.w.	$1.37½	July 1, 31	5,600	89	69⅜	81	+11½
7½	3¼	12⅝	4⅞	461,000	10	Simms Petroleum Co.	25c	Jan. 16, 33	4,300	10¾	10	10⅜	+ ⅜
5⅜	2½	9⅞	3	1,100,069	25	Skelly Oil Co.	50c	Dec. 15, 30	4,900	9¼	9	9⅛	+ ½
33½	12	57½	22	120,000	100	do pfd.	$1.50	May 1, 31	200	59	58	59	+ 1
12¼	5¼	17	6	31,701,348	25	Socony Vacuum Corp.	25c	Mar. 15, 33	157,600	18	16⅝	17¾	+ ⅞
100½	81	102¾	92½	764,925	100	S. O. Export Corp. pfd.	$2.50S.A.	Dec. 30, 33	500	102	101	102	+ 1
31⅞	15⅛	45	19⅛	13,102,900	N.P.	S. O. California	25cQ	Dec. 15, 33	51,400	42⅜	41	41½	+ ⅜
16½	7	39⅞	12¾	320,000	$10	S. O. Kansas	50c	Mar. 16, 31	300	37½	36⅝	37¼	+ 1
37⅜	19⅞	47½	22¾	25,740,965	25	S. O. New Jersey	50cS.A.	Dec. 15, 33	63,300	47¾	46¼	46⅞	+ ¾
39⅞	24⅝	59	35	1,590,406	N.P.	Sun Oil Co.	25cQ	Dec. 15, 33	4500	58	56	58	+ 2
92	68	103	89	100,000	$100	do pfd.	$1.50Q	Dec. 1, 33	340	103	101½	103	+ 1
2	¼	4½	¾	912,479	N.P.	Superior Oil Corp.	....	.....	11,100	2⅞	2½	2½	0
18¼	9¼	30⅛	10¾	9,851,236	$25	The Texas Corp.	25cQ	Jan. 1, 34	41,700	28	26¾	27¼	+ ¾
4	1½	6½	1⅜	930,570	10	Texas Pacific Coal & Oil Co.	....	Dec. 31, 29	8,500	4⅜	3⅞	4⅛	0
5⅝	2	11⅞	3⅛	5,998,919	N.P.	Tide Water Associated Oil Co.	....	Feb. 16, 31	51,100	11	10⅛	10¾	+ ⅝
60	20	65¼	23½	695,503	$100	do pfd. C. T. V.	....	Dec. 23, 33	1,400	72	69½	72	+ 3½
10	5	26	9¼	2,191,823	N.P.	Tide Water Oil Co.	25c	Dec. 23, 33	.....	.....	.....	.....	.....
62	30	80	45	199,446	$100	do pfd.	$1.25Q	Nov. 15, 33	300	82	81	81	— ½
15⅜	8	23⅝	8½	4,386,070	25	Union Oil of California	25cQ	Nov. 10, 33	16,200	20⅜	19⅛	19¼	— ¼
19¼	11¾	22¾	10½	1,200,000	N.P.	Union Tank Car Co.	30cQ	Sept. 1, 33	1,800	18¼	17⅜	17⅜	— ⅝
2¼	½	4⅞	⅝	759,538	N.P.	Warner Quinlan Co.	....	July 3, 30	900	2¾	2¼	2½	0
8¼	2¾	5½	2	431,443	$5	H. F. Wilcox Oil & Gas Co.	....	May 10, 28	5,600	5	4¾	5	+ ⅛

Standard Oil Stocks on New York Curb Market

1932 High	1932 Low	1933 High	1933 Low	Shares Issued	Par Value	Company	Div. Rate Period	Last Div. Paid	Transactions Week Ended Jan. 27 Sales Shares	High	Low	Last	Week's Change
7	6	13	6	40,000	$25	Borne Scrymser Co.	....	Oct. 15, 30	150	9	8	8	+ 1
35	17½	39¾	25	200,000	50	Buckeye Pipe Line Co.	75cQ	Dec. 15, 33	450	35	33	35	+ 1
90	53	129	71	120,000	25	Chesebrough Mfg. Co.	††$1Q	Dec. 30, 33	50	124½	124½	124½	+ 1½
3½	1¾	12	2¼	5,977,873	N.P.	Creole Petroleum Co.	....	.....	66,100	12½	11⅝	12⅜	+ ⅜
35	18	41¾	20	50,000	$100	Eureka Pipe Line Co.	$1Q	Nov. 1, 33	150	34¾	34	34¾	+ 2¼
55	35⅝	105½	40	9,000,000	N.P.	Humble Oil & Refg. Co.	50cQ	Jan. 1, 34	20,200	40½	38½	39¾	+ ⅞
10⅞	6¼	15⅞	6½	26,742,792	N.P.	Imperial Oil Corp. coup.	12½cQ	Dec. 1, 33	22,500	14	13⅛	13¾	+ ½
10⅛	6½	15¾	6½	.....	N.P.	do registered	12½cQ	Dec. 1, 33	.....	.....	.....	.....	.....
7½	2¾	8	3⅛	300,000	$10	Indiana Pipe Line Co.	††15c S.A.	Nov. 15, 33	300	5⅝	5⅝	5⅝	+ ⅛
12¼	8	23½	8⅞	14,247,088	N.P.	International Pet. Co.	28cQ	Dec. 15, 33	33,800	22¾	21	22¾	+ 1⅜
10½	6	10	5½	513,000	$12.50	National Transit Co.	40c S.A.	Dec. 15, 33	100	8	8	8	— ¼
6	2¼	4⅞	3	100,000	5	New York Transit Co.	15c S.A.	Oct. 14, 33	150	3⅝	3½	3½	+ ½
5½	3⅜	6⅜	4¼	120,000	10	Northern Pipe Line Co.	25c S.A.	Jan. 1, 34	100	5	5	5	+ ¼
79	60	87	70¼	580,796	100	Ohio Oil Co. pfd.	$1.50Q	Dec. 15, 33	200	87	87	87	+ 2
10	1¾	4	1¼	400,000	25	Penn Mex. Fuel Co.	75c	Dec. 22, 33	400	6	5	6	+ 2¼
10	3¾	6	2¾	100,000	10	Southern Pipe Line Co.	10c	Sept. 1, 33	.....	.....	.....	.....	.....
16½	9⅝	22⅛	11	1,200,000	25	South Penn Oil Co.	20cQ	Dec. 30, 33	2,800	20¾	19⅛	20¾	+ 1⅜
37	27	43	24½	35,000	50	South West Pa. Pipe Lines	$1Q	Dec. 27, 33	.....	.....	.....	.....	.....
25⅛	13¼	34	17	15,941,894	25	S. O. Indiana	25cQ	Dec. 15, 33	35,100	32¾	31⅞	32¼	0
15⅞	8⅞	19¼	8⅜	2,606,983	10	S. O. Kentucky	25cQ	Dec. 15, 33	7,100	17½	16½	16⅞	+ ¼
19	10¼	20½	11	190,822	25	S. O. Nebraska	25cQ	Dec. 20, 33	400	16⅝	15½	16⅝	+ ⅜
30⅛	15½	41	15½	752,465	25	S. O. Ohio	....	Jan. 3, 33	2,900	27	25½	26⅜	+ ⅜
87	75	88	60	120,000	100	do 5% pfd.	$1.25Q	Jan. 15, 34	140	82	79¾	82	+ 4½
2	1⅝	3	1	34,158	25	Swan Finch Oil Corp.	....	Dec. 1, 30	200	4½	4	4½	+ 1

*New high †New low ††Also extra—Chesebrough 50c; Indiana Pipe Line 10c.

Oil Aids Aviation Growth

NEW YORK, Jan. 25.—The steady growth of air transportation, both passenger and mail, during 1933, is pointed out in a review by the Stanavo Specifications Board.

Contributors to this growth are oil companies whose improved fuels and lubricating oils and better servicing and marketing facilities have made possible the long list of speed records hung up in 1933 and the large number of non-stop flights over vast distances.

Distributors of Stanavo aviation gasolines and oils cooperated in many of the outstanding flights last year, among the most important of which was the 30,000 mile flight of Col. and Mrs. Lindbergh from New York to Europe, Africa and South America, and the 12,000 mile Rome-to-Chicago flight of Gen. Balbo and his 24 seaplanes.

Oil and Royalty Stocks on New York Curb

1932 High	1932 Low	1933 High	1933 Low	Par Value	Company	Transactions Week Ended Jan. 27 Sales Shares	High	Low	Last	Week's Change
⅝	1/16	2¾	⅛	N.P.	American Maracaibo...	4,800	1⅛	1	1⅛	+ 1/16
3¾	⅝	5½	1⅛	N.P.	Arkansas Nat. Gas....	1,400	2⅛	1¾	1⅞	— 1/16
3¾	½	4	1	N.P.	do A	2,800	2	1¾	1¾	— ¼
5⅜	1½	4⅛	2	$10	do pfd	600	3¾	2½	3¾	+ ¼
9¾	6¾	15¼	6⅛	N.P.	British Amer. Oil coup.	300	14	14	14	— ½
¾	1/16	7¾	1/16	$1/4	Carib Syndicate.....	5,300	4	3½	3½	— ¼
6⅞	1¾	6¼	1⅞	N.P.	Cities Service.....	46,800	3¼	3	3⅛	+ 1/16
53⅛	10	30	10½	$100	do pfd	1,100	18¼	17	18	+ ½
4½	1	3¾	1	10	do pfd. B	300	1⅝	1⅜	1⅝	+ 1/16
45	9	25	5	100	do pref. BB	10	12½	12½	12½	+ ½
1¼	1/16	4	1/16	N.P.	Colon Oil Corp.....	1,800	2¼	1¾	2	— ¼
2½	½	2½	⅛	N.P.	Columbia Oil & Gas vtc.	700	1½	1	1⅛	+ 1/16
....	....	2⅞	1	$1	Consolidated Royalty..	100	1⅞	1⅞	1⅞	+ 1/16
2¼	¼	3⅛	1⅛	N.P.	Cosden Oil.....	1,700	3⅜	2¾	2¾	— ¾
8	1⅞	6½	6	$100	do pfd.	.....	....	....	....	....
⅝	⅛	1½	⅛	N.P.	Crown Central Pet.....	2,700	1	⅞	⅞	— 1/16
7½	1⅛	8	2⅛	N.P.	Darby Petroleum.....	600	7½	6⅝	6⅝	— ¾
3	1	2¾	⅛	N.P.	Derby Oil & Refg.....	1,300	2	1⅞	2	+ 1/16
24½	10¼	27	25	N.P.	do pfd	.....	....	....	....	....
44⅝	23	62	24	$25	Gulf Oil Corp.....	17,200	76¾	71⅝	74	+ 2½
5	⅝	7	1¼	N.P.	Indian Ter. Illg. Oil A..	600	3⅛	2	3⅛	+ 1/16
4½	1⅛	6½	1¼	N.P.	do B	500	2½	2¼	2¼	— ¼
¼	⅛	⅛	⅛	$5	Intercontinental Pet...	33,800	22¾	21	22¾	+ 1⅜
1	⅜	2	⅜	N.P.	Kirby Petroleum.....	5,800	2	1⅞	1⅞	— 1/16
⅝	⅛	1½	⅛	$25	Leonard Oil Dev.....	5,100	¾	½	⅝	+ 1/16
3½	⅛	9½	1¼	N.P.	Lion Oil Refg.....	100	5⅛	5⅛	5⅛	+ 1/16
11	3⅜	12⅛	4¾	N.P.	Lone Star Gas.....	1,000	7	6⅝	6¾	— ⅛
¼	⅛	.....	....	$1	Magdalena Syndicate..	.....	.....	....	....	....
8	3¼	7	4	N.P.	Margay Oil Co.....	.....	.....	....	....	....
3⅝	1½	5	1½	N.P.	Mexico-Ohio Oil.....	200	2	2	2	0
2	½	6½	1	N.P.	Michigan Gas & Oil...	1,500	4¼	3¾	4¼	+ 3/16
1½	½	4	1¼	N.P.	Mid. States Pet. A vtc.	900	1⅜	1⅛	1⅜	0
⅝	¼	1⅜	¼	N.P.	do B vtc.....	1,000	½	½	½	0
⅝	1/16	1¼	¼	$1	Mountain & Gulf.....	500	⅝	⅝	⅝	+ 1/16
4¾	2⅛	6½	2½	10	Mountain Producers...	2,600	4½	4¼	4¼	+ ⅛
14⅝	8	20	10	N.P.	National Fuel Gas.....	500	14¾	14⅛	14½	+ ½
⅛	⅛	2⅛	1/16	$5	New Bradford Oil.....	1,000	2⅛	2	2⅛	+ 1/16
1½	⅛	5	½	N.P.	North Central Texas..	400	2⅜	2⅛	2⅜	+ ½
⅛	⅛	½	⅛	N.P.	North European.....	1,400	¼	⅛	⅛	0
5	2	8⅝	3	N.P.	Oil Stocks Ltd. A.....	3,300	8⅝	8¼	8⅝	+ 3/16
8	3	7⅝	3	N.P.	Pacific Western.....	.....	.....	....	....	....
⅛	⅛	3¾	⅛	N.P.	Pantepec of Venezuela	9,200	1¼	1⅛	1¼	0
⅛	⅛	1¼	¼	N.P.	Producers Royalty....	7,600	5/16	1/16	½	— 1/16
60¾	40	57	21	$100	Pure Oil 6% pfd.....	270	52½	46½	52½	+ 6
1	1/16	2⅛	1/16	N.P.	Red Bank Oil.....	.....	.....	....	....	....
½	⅛	1⅛	¼	N.P.	Reiter-Foster Oil.....	600	⅞	¾	¾	0
1	⅛	2¼	¼	$25	Richfield Oil pfd.....	3,400	1¼	1	1	+ 1/16
1½	1	1¾	⅞	1	Root Refining.....	600	1¼	1⅛	1⅛	0
7½	1¼	8	3	10	do pfd.	.....	....	....	....	....
½	½	....	....	$10	Royalty Corp. pfd.....	.....	.....	....	....	....
2⅛	⅝	4⅛	⅝	N.P.	Ryan Consolidated....	1,700	2½	1¾	2¾	+ ¾
⅞	⅛	1	⅝	$10	Salt Creek Consolidated	2,200	⅝	5/16	⅝	+ 1/16
5½	2⅛	9¼	3½	10	Salt Creek Prod.....	1,700	6¾	6⅝	6⅝	— ⅛
....	....	3¾	⅝	25	Shrev. El Dorado P.L.	.....	.....	....	....	....
5	2⅛	6¾	3¼	N.P.	Southland Royalty....	1,300	5⅛	5	5⅛	+ 1/16
⅝	¼	1½	¼	$5	Sunray Oil.....	2,300	1	13/16	13/16	— 1/16
10½	4½	13	6¼	N.P.	Texon Oil & Land.....	3,900	8⅛	7	8	+ 1⅜
11/16	1/16	1⅝	⅛	$5	Venezuela Petroleum..	1,700	11/16	1/16	11/16	+ 1/16
2⅛	1⅛	3¾	1½	1	Woodley Petroleum...	3,000	4¾	3½	4¾	+ 1½
1⅜	½	¾	½	N.P.	Y Oil & Gas.....	.....	....	....	....	....

*New High. †New Low.

New York Bonds

Week Ended Jan. 27

	High	Low	Last	Change
Asso. Oil Gold 6s.....	104⅛	103	104⅛	+ ⅞
Atlantic Refg. deb. 5s...	104½	104	104	— ¼
Calif. Pet. 5s.....	99½	99½	99½	— ½
Calif. Pet. 5½s.....	101¼	100½	100⅞	— ⅛
General Pet. 5s.....	105	103¾	104	0
Houston Oil 5½s.....	73	72	72	0
Humble Oil & Refg. 5s..	104⅜	103⅞	104⅜	+ ⅜
Pan Amer. Pet. of Calif. 6s	34⅛	32¼	34	0
Pan Amer. Pet. of Calif. 6s ctfs.....	32	30	32	0
Phillips Pet. 5½s.....	93½	92¾	93	+ ½
Pure Oil 5½s '39.....	92	89½	91⅛	+1⅜
Pure Oil 5½s '37.....	95½	92½	95	+2⅞
Richfield Oil of Calif. 6s..	28	25½	26	—1
Richfield Oil of Calif. 6s ctfs.....	28	24½	25	—2
Shell Union Oil 5s.....	92½	91½	92	0
Shell Union Oil 5s w.w...	92¾	91½	92¾	+ ½
Sinclair Con. Oil 7s A...	104	103	103⅝	—1⅛
Sinclair Con. Oil 6½s B.	103	102¼	103	+ ¾
Skelly Oil 5½s.....	89	88	88	—1¼
S. O. N. J. 5s.....	105½	104½	105	+ ¼
S. O. N. Y. 4½s.....	102	101¼	101¾	— ¼
Union Oil of Calif. 5s '45.	98	97½	97½	— ½
Union Oil of Calif. 6s A..	108¾	108	108	— ¾
Warner-Quinlan 6s '39..	38⅛	34	37	+3¼

Cities Service to Sell Ethyl

NEW YORK, Jan. 27.—Cities Service Oil Co. and subsidiaries are preparing to market Ethyl gasoline about Feb. 1. Arrangements are now being made to install the necessary blending equipment. The products to be blended will be the premium fuel and the regular grade. The third grade will remain unblended.

New York Curb Bonds

Week Ending Jan. 27

	High	Low	Last	Change
Cities Serv. 5s '50.....	40⅞	38½	40⅞	+2
Cities Serv. 5s '66.....	40½	37½	40	+1½
Cities Serv. G. 5½s '42..	57½	55¼	57½	+2⅞
Cont. Oil 5¼s '37.....	102	101⅞	102	+⅛
Empire O & R 5½s '42..	53½	50¾	53	+1¾
Gulf Oil 5s '37.....	102½	101⅞	102½	+ ⅝
Gulf Oil 5s '47.....	102½	101¼	101⅞	+ ⅞
Indep. Oil 6s '39.....	102¼	101¼	101¾	+ ½
Sun Oil 5½s '39.....	104	103¼	103⅞	+ ⅜
Sun Oil 5s '34.....	101	100⅞	101	0
Sun Pipe Line 5s '40....	102¾	102¼	102¾	+ ¾
Tide Water 5s '79.....	60¾	58¼	60¾	+1¾

Pittsburgh Stock Exchange

Transactions Week Ended Jan. 26, 1934

	Sales	High	Low	Last	Change Over Week
Ark. Nat. Gas pfd.	200	3½	3	3	+ ⅛
†Col. Gas & Elec..	894	15⅜	14	14⅝	+ ⅜
‡Gulf Oil of Pa...	200	73½	73½	73½	+19½
†Lone Star Gas....	4,353	7¼	6¾	6¾	— ⅛
‡ do 6 p.c. conv. pfd.....	90	69½	68½	69	+2
‡ do 6½ p.c. conv. pfd.....	25	75	75	75	0
Pittsburgh Oil & Gas.....	33	1	1	1	0
Plymouth Oil....	125	15⅞	15½	15⅞	+ ⅝
Shamrock Oil & Gas.....	650	2	2	2	+ ⅛
West. Pub. Serv..	1,257	5¾	5¼	5¼	+ ¼

†Dividends payable in new preferred stock. ‡Unlisted.

MARSHFIELD, Wis.—Lloyd Felker, head of the Felker Oil Co. here, is recovering from a serious operation.

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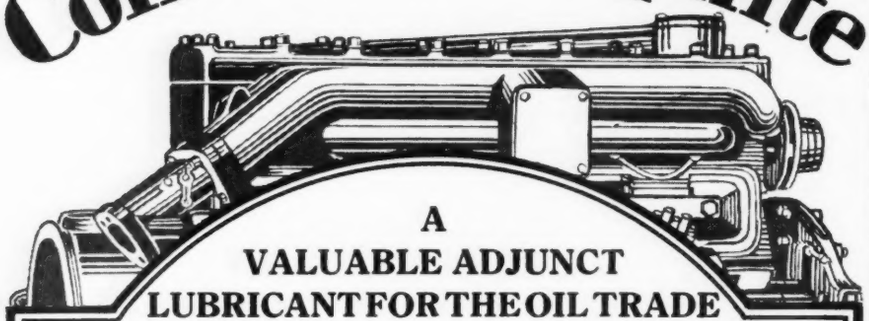

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Letters to the Editor

Co-Operatives

Dear Editor:

I wish someone with a better education than I have would take this subject and thresh it out to see what we have, where it leads to, and what is behind the movement.

Co-Operatives, as I understand it pay no income tax, because they are not in business for profit, if so, why is it that they take pride in showing a net income in their yearly and half yearly reports as published in the Farmers Union Herald, not in business for profit.

We hear and see lots of kicks about moneyed interests, dodging income taxes, through investment in government bonds and sometimes through smart tactics that might be questionable, and I am not defending any tax dodger, but on the other hand, I do say there is a large share of money that is dodging the income tax by being invested in co-operative enterprises that show net earnings which would pay large income taxes if shown by an individual, partnership, or corporation.

Another proposition, I hope I can make it clear and understandable: we hear a lot about watered stock of the big capitalistic corporations, would an audit of all co-operatives show that each and every one of them had a dollars value in merchandise, property, accounts collectable, and cash, for every dollars worth of capital stock outstanding.

Any co-operative that can not show a surplus above capital stock issued should not be allowed to pay a dividend of any kind, as to do so is false, misleading, uneconomic, and should also be classed as an unfair trade practice and not permissable under the NRA code.

Before coming into the oil business I was in the creamery business as owner and operator, and while thus engaged I was in competition with a co-operative that paid a big price for cream and at the end of the year it paid a patronage dividend and after running about a dozen years it was their misfortune to have a fire, building and contents all were burned, but they were fully covered by insurance, and if this plant had been managed right, if they had laid aside every year cash in amount allowable for depreciation, this cash together with the amount realized from the insurance carried and collected, should have enabled them to rebuild without an extra assessment on their stockholders. But such was not the case, the amount charged off for depreciation was not held in a separate fund but was used to pay a cash patronage dividend, to make it tough for individual competition, some will say, that is allright

the farmers had the use of the money and they could afford the extra assessment to rebuild. I want to know how they could have raised the extra assessment at any time during the last two years.

Now about the fictitious patronage dividends: what effect did they have on competition? After comparing net returns before the extra assessment came along everything was in favor of the co-op. and they drew a lot of trade away from the individual that was operating on a plan whereby if he had the misfortune to be burned out he could not go to his customers for an assessment to rebuild, but would have to foot the bill himself. As I was the individual in question in this case I know what the results were, they were bad for the individual, but you could not convince the officials of the co-op. that their system of doing business was an unfair trade practice.

We see a lot of complaint in the trade papers about "Major" competition. I have no love for the majors myself, but I say unless something is done to correct the evils of false patronage dividends, we independents have more to fear from the co-operatives than we have from the majors.

Here is what I predict will eventually happen unless some evils are corrected: we small independents will go to the wall, then it will be between the co-ops. and the majors. When that time comes the majors will probably own all the refineries and patents and the co-ops. will pay the price asked by the refinery which will mean a major monopoly and that would not be tolerable which in the end will mean government ownership.

I believe the solution to the small independent jobbers troubles here in the midwest lies in a lower margin on gasoline delivered into the customers storage.

In the NATIONAL PETROLEUM NEWS, Oct. 18, Page 18, "The Schedule" says three and one half cents above delivered tank car price for deliveries into customers storage by tank truck. I want to ask you how much gallonage dividend could a co-op. pay on this basis? I also want to ask you would you rather hold your volume on this basis and be busy or have the margin larger and lose your volume to a concern paying a 2 or 2.5-cent gallonage dividend? I for one am in favor of that part of schedule.

If co-operatives were compelled to manage their business in a true business manner and pay dividends out of a true surplus or profit only, if they were compelled to charge off a correct and fair amount for depreciation and maintain and keep such amount in a separate fund to be used only for replacement of worn out equipment and additions to plant equipment, and if the margins were smaller on tank wagon sales to farmers and consumers, there would not be the incentive to buy from the co-op. or join with them, it would also spoil the promoters' graft.

The government has the power to examine our books in relation to the NRA and in the same relation they should have the power to make rules for the Co-ops. to live up to as in regard to requirements to be met before paying patronage dividends.

I believe there are a lot of small independent jobbers in these United States in the same boat as myself, our little all saved through almost a half century of hard work is invested in a small bulk plant and truck to do the delivering and if we should lose out it will only be a question of a few short years and it will be over the hill to the poor house while some truck drivers delivering for the co-ops. will be making a good living with a small investment due to a large volume.

I claim the right to make a living for myself and family in the line of business I have chosen and under the NRA if it means anything I claim the right to be protected from business and financial sabotage as practiced by some socalled mismanaged co-operatives.

Hoping I have made my idea clear and understandable and fit to print in your paper and that the same may be presented to the proper authorities at Washington I am,

Yours for a Square Deal
In The New Deal
A. Zoerb
Owner of Temvik Oil Station

P. S.—I know that all co-operatives are not managed in the way I am writing about, so it will not offend them but for those that the shoe fits let them wear it.

Employe Organizations Are Increasing

NEW YORK—Since the enactment of the National Industrial Recovery Act, the number of companies that deal with their workers through employe-representation plans has increased 180 per cent, and the number of companies that have trade-union agreements with their employes has increased 75 per cent according to a nation-wide survey conducted by the National Industrial Conference Board. Reports received from manufacturing and mining industries employing 27 per cent of all employed showed that employe-representation plans predominated in metal mining, metal working, rubber products, and petroleum refining, while trade-union agreements were most prevalent in clothing, printing and publishing, stone, clay and glass, textiles, and coal mining.

CHICAGO, Jan. 23.—E. E. Smith, president of the Smith Oil & Refg. Co., Rockford, Illinois expects to leave this week for St. Petersburg, Florida for a vacation.

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I ainna v-e-r-r-y free wi' me tips o-orinarily . . . but here's one I'm a givin' ye wi' ple-a-a-sure . . . BUY VIKING ROTARY PUMPS."

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